



CITY OF
BAINBRIDGE ISLAND

UTILITY ADVISORY COMMITTEE
REGULAR MEETING
WEDNESDAY, FEBRUARY 9, 2022
5:30 PM
ZOOM MEETING

THE UTILITY ADVISORY COMMITTEE WILL HOLD THIS MEETING
USING A VIRTUAL, ZOOM WEBINAR, PER GOVERNOR
INSLEE'S "STAY HOME, STAY HEALTHY" ORDERS

PLEASE CLICK THE LINK BELOW TO JOIN THE WEBINAR:

[HTTPS://BAINBRIDGEWA.ZOOM.US/J/91263203129](https://bainbridgewa.zoom.us/j/91263203129)

TELEPHONE: 1 253 215 8782

WEBINAR ID: 912 6320 3129

AGENDA

1. CALL TO ORDER / ROLL CALL / ACCEPT OR MODIFY AGENDA / CONFLICT OF INTEREST DISCLOSURE
5:30 PM
2. APPROVE DECEMBER 8, 2021 MEETING MINUTES – 5 MIN
3. REVIEW DRAFT SCOPES OF WORK – 50 MIN
 - WASTEWATER TREATMENT PLAN CAPACITY UPGRADES
 - WASTEWATER BENEFICIAL RE-USE
 - SUNDAY COVE, LOWER LOVELL, WOOD, WING POINT SEWER PROJECT
 - WINSLOW WATER TANK REPLACEMENT
 - STORMWATER SYSTEM PLAN
4. PUBLIC WORKS UPDATE – 10 MIN
 - WATER/SEWER RATE STUDY
 - FERNCLIFF/CASEY WATER EXTENSION
5. UPDATE FROM THE SUB-COMMITTEE MEMBERS ON THE GROUND WATER MANAGEMENT PLAN – 10 MIN
6. NEXT MEETING AGENDA PLANNING – 5 MIN
7. ADJOURNMENT

UTILITY ADVISORY COMMITTEE MINUTES
December 8, 2021

Call to Order

Zoom meeting called to order 5:30 pm.

Members Present: Andy Maron, Ted Jones, Susan Hume, Charlie Averill, Martin Pastucha, Svend Brandt-Erichsen. Sheina Hughes joined near the end of the meeting

Also Present: Chris Wierzbicki (Public Works Director).

Stormwater System Plan

Chris Wierzbicki provided an overview of progress on development of the City's stormwater system plan. City staff are reviewing consultant qualifications and hope to present a proposed scope of work to the City Council in January. Ideally the consultant would provide input that would influence the City's CIP, but the timing may not work out.

No UAC action – briefing was advisory.

McDonald Creek Culvert

Chris also provided an update on the McDonald Creek culvert replacement project. The project has been delayed by disagreements regarding whether fish are present in the stream. Accommodating fish passage would affect project design and permitting.

No UAC action – briefing was advisory.

Committee Work Plan

Ted Jones led discussion of the Committee's draft report summarizing the Committee's 2021 activities and proposed 2022 work plan. The summary/work plan is expected to be on the Council agenda for January 11, 2022.

The Committee provided comments on the draft summary/work plan and approved submittal of the document to the Council.

Solid Waste Management

The Committee engaged in a general discussion of solid waste management. Bainbridge Disposal does not have a franchise agreement with the City. There was a discussion of whether more information should be collected regarding where the Island's waste goes, including an evaluation of whether there are additional opportunities for composting, recycling, or other alternatives to landfill disposal. Andy Maron and Charlie Averill provided historical background on the beginning of recycling on the Island.

No UAC Action – the discussion occurred during review of the 2022 work plan. No items were added to the work plan in response to the discussion.

Utility Tour

General discussion of the logistics for the tour of the City's utility infrastructure, scheduled for December 11, 2021. Several new City Council members are expected to participate in the tour. The tour will be led by Andy, Ted and Chris.

Election of Committee Leadership

Andy Maron and Ted Jones were re-elected as committee co-chairs by unanimous voice vote.

Meeting Scheduling

After evaluating possible changes in the date or time for the Committee's future meetings, the decision was made to continue with the existing schedule of meeting at 5:30 on the second Wednesday of each month.

Meeting Adjourned

Co-Chair

02/09/2022

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General

The Winslow Wastewater Treatment Plant (WWTP) is meeting all discharge limits during normal operations; however, recent high waste stream loads have led to the plant exceeding the facility's design criteria outlined in the City's Department of Ecology (DOE) discharge permit. These exceedances require that the City engage with DOE in the short term on a plan for increasing the rating capacity of plant, as well as begin planning and implementation of recommended operational or physical changes to the plant that will increase capacity.

The City has performed some preliminary evaluation work on the potential options and next steps, and envisions this work proceeding in phases:

- Working with the City and DOE to develop and implement a plan for increasing the rating capacity of plant in the near (1-2 years) and long (4-10 years) term;
- Design engineering and implementation of short-term plant improvements to existing plant processes to increase capacity for rerating opportunities.
- Engaging with DOE on the preliminary evaluation of a plan for meeting the Puget Sound Nutrient General Permit.

The scope of work for this initial phase includes:

- Evaluate existing conditions, including DMR data, sampling and monitoring, and unit process capacity and condition assessment.
- Develop and implement immediate improvements to improve plant performance and support future rerating plant capacity.
- Develop recommendations for near-term optimization approaches.

Implementation of near-term optimization approaches and development of long-term improvements to be addressed in a future phase.

Task 100 Project Management

This task includes all work related to the management, administration, quality assurance/quality control (QA/QC) and coordination of consultant activities during the course of the work.

Subtask 101 – Cost Control/Progress Reporting/Subconsultant Management

The Consultant will prepare monthly project status reports that compare work accomplished with schedule activities, provide support documentation for the invoices and compare expenditures with task budgets. Documentation will include details of expenditures on each task and will show the hours worked by project personnel and other direct expenses related to the task. All reports will be submitted to the City's Project Manager with the monthly invoices.

The Consultant will coordinate efforts of subconsultants, ensuring that their work products are delivered in a timely and complete manner and are integrated into other work products as necessary.

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Assumptions

1. Assume 12 month task duration.

Deliverables: Monthly status reports and invoices.

Subtask 102 – Project Management Plan

Develop Project Management Plan (PM Plan) within 15 working days of the Notice to Proceed and will include the following elements:

- Project Description and Background.
- Team Roles and Responsibilities.
- Project Procedures (documentation, sharepoint file structure)
- Communication Plan (Project team organization, contact info, communication protocols)
- Quality Management Plan.
- Action, Decision and Change Control Log.
- Health and Safety Plan

Assumptions

1. Maximum 5 page Project Management plan

Deliverables: Draft and Final Project Management Plan, Health and Safety Plan

Subtask 103 – Quality Assurance/Quality Control

Quality Assurance/Quality Control (QA/QC) will provide an independent review of all technical memorandums. All QA/QC comments will be incorporated into the deliverables or will be documented as to why comments are not included. The quality assurance/quality control task leader will schedule all reviews and coordinate all of the City comments.

Deliverables: QA/QC reviews of deliverables and responses to QA/QC comments.

Subtask 104 – Meetings with the Department of Ecology

The Consultant will arrange for and conduct up to three meetings with the Department of Ecology (Ecology) in collaboration with the City. The purpose of the meetings will be to solicit Ecology's input into the process. For each meeting the Consultant will establish phone contact with participants, prepare an agenda, attend the meeting, prepare presentation and prepare a follow-up meeting summary.

Deliverables: Agendas, presentations and meeting minutes.

Task 200 Background Information and Plant Condition Assessment and Capacity Evaluation

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Subtask 201 – Gather Existing Reports and Plant Data

The Consultant will request data needed to evaluate current conditions and support process evaluation. Evaluation of existing data includes review of DMR data, existing Sewer Plan, and other planning documents.

Specific Activities include:

1. Compile list of available documents and send a request for additional information.

Assumptions

1. Evaluation of data will occur in the subsequent tasks

Deliverables: Background Information Data Review summarized in Draft Treatment Plant Condition Assessment and Capacity Analysis TM

Subtask 202– Flow, Load Evaluation

Based on the existing information reviewed in Subtask 201 and current NPDES permit, establish the treatment design criteria for evaluating the treatment plant performance. Using the above projections, and available plant and commercial loading data, the Consultant will establish loading estimates and peaking factors for organic, solids and nitrogen loading to the plant. Peaking factors will be developed for BOD, TSS, and TKN loading to the treatment plant as follows: Maximum month, maximum day, and peak hour.

Specific tasks will include:

1. Evaluation will include review of the following:
 - a. Review plant's operating and DMR data from 2017-2022.
 - b. Review the population and flow study, methodology, and flow projections.
 - c. Reviewing projected Flow design criteria (based on assumptions in the Sewer Plan)
 - d. Historical load increases (increase load, reduce load ie source control)
2. Determine short-term and long-term influent capacity requirement:
 - a. Flow design criteria (evaluate flow reduction, increased flow)
 - b. Load design criteria (increase load)
 - c. Nitrogen and Phosphorus

Assumptions

1. City to provide historical growth projection data or provide means for basing flows and loads projections by.

Deliverables: Flows and Load evaluation and criteria summarized Draft Treatment Plant Condition Assessment and Capacity Analysis TM

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Subtask 203–Nitrogen Removal Design Criteria

Based on the existing information reviewed in Subtask 201 and current NPDES permit, establish the treatment design criteria for evaluating the treatment plant performance. Consultant will assess nitrogen removal potential of current treatment process and confirm the TIN removal performance. This task supports the initial requirements of the Puget Sound Nutrient General Permit.

Assumptions

1. None

Deliverables: Nitrogen removal criteria summarized in Treatment Plant Condition Assessment and Capacity Analysis TM

Subtask 204– Wastewater Facilities Condition Assessment

Perform a condition assessment of equipment associated with the Winslow WWTP. The assessment will include a site visit to the facility and visual inspection of the equipment with the plant staff.

Specific tasks will include:

1. Conduct a qualitative assessment of the physical condition and functionality of equipment.
 - o Set up two (2), one-day site visit with City staff to assess the condition of major unit process, subcomponents and appurtenances equipment.
 - o Review available plant maintenance records and interview City plant staff
 - o For each tour, the Consultant will contact the facility, arrange logistics, write notes of any significant findings, and take digital photos.
2. Establish a numeric rating system to assess the age, physical condition, and functionality of the equipment. Functionality relates to the ability of the unit process to accomplish its function and operating performance.

Assumptions

1. The condition assessment will focus on the main unit processes at the plant. The Consultant will assess the associated process mechanical equipment and related instruments for the following systems:
 - Preliminary Treatment
 - Secondary Treatment
 - Aeration blower equipment
 - Diffused air equipment
 - Clarifier equipment
 - RAS/WAS pumping equipment
 - UV Disinfection System
 - Effluent Pump Station
 - Effluent Outfall

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2. Condition assessment of administration, laboratory space and facilities buildings not included. Condition assessment of structures, electrical distribution (transformers and switchgears), HVAC and plumbing components not included.
3. Coordinate shutdowns of plant systems as required to analyze certain in-tank equipment (ie. Fine bubble diffusers in Oxidation ditch)

Deliverables: Facilities condition assessment summarized in Treatment Plant Condition Assessment and Capacity Analysis TM

Subtask 205 –Treatment Plant Unit Processes Capacity Evaluation

Perform a capacity evaluation of each unit process in the Winslow WWTP that will serve as the basis for all recommended short- and long-term improvements and potential re-ratings. Evaluate unit processes based on short-term and long-term projections (ie flows and loads) developed in Subtask 202, hydraulic analysis in Subtask 207 and design guidelines contained in Ecology's Criteria for Sewage Works Design. The following unit processes in the WWTP will be evaluated:

- Preliminary Treatment
- Secondary Treatment
 - Aeration blower equipment
 - Diffused air equipment
 - Clarifier equipment
 - RAS/WAS pumping equipment
- UV Disinfection System (including power supply)
- Effluent Pump Station
- Effluent Outfall
- Solids handling equipment
- Instrumentation and control strategy (as it relates to process improvements)

Specific tasks will include the following:

1. Assess capacity of each unit process and effluent outfall; based on design flow and loads and applicable *Criteria for Sewage Works Design* (Orange Book); identify bottlenecks based on the short and long-term design criteria established in Subtask 202.
2. Summarize results in a *Treatment Plant Condition Assessment and Capacity Analysis TM*.

Assumptions

1. Process model analyses to support unit process analysis and overall treatment capacity of existing facilities
2. Effluent outfall analysis includes hydraulic capacity assessment only

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Deliverables: Draft and Final Treatment Plant Condition Assessment and Capacity Analysis TM

Subtask 206 – Plant Performance Assessment

The Consultant will review operational data and assess the current operation and performance of the unit processes listed below. This assessment will include discussions with the plant staff and on-site review of control setpoints.

1. Preliminary treatment (screens and grit removal)
2. Secondary Treatment
 - a. Blowers
 - b. DO setpoints
 - c. Sludge Age
3. UV disinfection
4. Effluent pumping

The assessment will also include evaluation of current sampling and monitoring activities to measure performance improvements.

Deliverables: Plant performance assessment summarized in Treatment Plant Condition Assessment and Capacity Analysis TM

Subtask 207– Hydraulic Analysis

Perform hydraulic analysis for the existing WWTP based on the existing and projected design flow criteria. Evaluate hydraulic constraints and identify bottlenecks within the existing WWTP and outfall.

Update hydraulic profiles for existing WWTP for updated flow projections.

Assumptions

1. Update existing hydraulic profile developed during the 2012 plant upgrades.

Deliverables: Hydraulic Profile for short-term and long-term design criteria

Subtask 208– UV Disinfection Evaluation and Troubleshooting

The consultant will assist the client in evaluating current issues with the UV disinfection system. This subtask will include an evaluation of programming and hardware associated with the UV control panel. The Consultant will coordinate with the OEM equipment manufacturer to discuss the issues and potential solutions that can be implemented as soon as possible.

Assumptions:

1. The UV system transitions to manual operation following a surge in power.

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Deliverables: See Section 301

Task 300 Optimization of Existing Facility

The purpose of this task is to develop a phased approach to identify, develop and evaluate improvements to the Winslow WWTP. Based on the initial condition and operational assessment (Task 200), the consultant will recommend immediate (or easily) implemented operational recommendations as described in Subtask 301 and recommendations for Optimization Plant improvements as described in Subtask 302.

Subtask 301 –Immediate Plant Improvements

Based on the data evaluation and assessment in Task 200, the Consultant will identify immediate plant improvements. Specific tasks will include:

1. In a TM, Identify, develop and screen immediate plant improvements, which can include easy to implement operational changes to:
 - a. to optimize waste sludge thickening
 - b. to optimize of DO/Aeration Control
 - c. to provide SRT operating factor control for solids inventory
 - d. to improve reliability of UV disinfection system
 - e. State Point Analysis and DSVI monitoring
2. Planning workshop with City staff. City staff will receive relevant technical memoranda approximately one week before the workshop. During the workshop, the Consultant will present the analysis from the memoranda and facilitate discussion with City staff. The goal of the workshop is to decide on which immediate plant improvements to implement and sampling to implement to monitor performance.
3. Analyze plant performance after implementation of immediate improvements and update TM to include a discussion of results.

Assumptions

1. Immediate plant improvements assume operational (process), programming or sampling and monitoring modifications to improve plant performance and collect further data to evaluate rerating opportunities. Assumes no capital costs required to implement immediate plant improvements.

Deliverables: Draft and Final Immediate Plant Improvements TM

Subtask 302 – Near-term Optimization Plant Improvements

Based on the data evaluation and assessment in Task 200 and Subtask 301, the Consultant will identify near-term plant improvements to support capacity rerating and optimization approach as required by the Puget Sound Nutrient General Permit. Specific tasks will include:

1. Identify, develop and screen near-term optimization approaches with City staff, which can include:

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- a. Operational approaches to optimize waste sludge thickening, SRT operating factor control for solids inventory, and aerated WAS holding requirements
 - b. Diffuser layout and optimization of DO/Aeration Control
 - c. Install anaerobic selector and sludge granulation
 - d. Step feed
2. Integrate short-term capacity re-rating and *Puget Sound Nutrient General Permit* compliance strategies.
3. Process modeling of WWTP to assess and recommend additional loading capabilities (re-ratings) in the short-term while meeting nutrient (nitrogen) compliance requirements listed in the *Puget Sound Nutrient General Permit*.
4. Provide operational training, as required, to help implement short-term recommendations.
5. Identify and evaluate options for long-term capacity and compliance requirements.
6. Develop planning level budgets for deployment of preferred near-term rerating upgrades.

Assumptions

1. Limited design engineering services may be required to develop near-term optimization alternatives. (limited to 1-2 schematic designs)

Deliverables: Draft and Final Near-term Optimization plant improvements

City of Bainbridge Island

Wastewater Beneficial Reuse Analysis

Scope of Services

Background

The City of Bainbridge Island (City) has set aside American Rescue Plan Act (ARPA) funding for an initial review of the beneficial reuse of wastewater. The City envisions this to be a phased approach, with the objective of this initial step being identification of opportunities and constraints regarding reuse. The City is contracting with HDR Engineering, Inc. (HDR) to conduct the initial work in 2022. HDR has outlined the work according to the following tasks:

- Task 1 – Project Management
- Task 2 – Identify Needs and Drivers
- Task 3 – Identify Reuse Opportunities
- Task 4 – Initial Community Engagement
- Task 5 – Develop Refined Opportunities List
- Task 6 – Detailed Reuse Opportunities Evaluation
- Task 7 – Cost/Benefit Analysis
- Task 8 – Reuse Implementation Plan

This scope of services and fee estimate covers Tasks 1-5. The scope and fee of subsequent tasks will be developed at the conclusion of Task 5, with those later tasks being authorized by a contract amendment.

The results of this work will inform the development of next steps, such as additional community engagement, a conceptual design or programmatic planning efforts.

Note: Unless otherwise indicated, project meetings will be held in a virtual setting using WebEx, Microsoft Teams or other similar method. For project meetings that are conducted in person, the current HDR and City protocols regarding personal interactions during the COVID-19 pandemic will be followed by all HDR personnel in attendance.

Task 1 Project Management

Objective

The purpose of this task is to monitor, manage and adjust scope, schedule, and budget as well as provide monthly status reporting, accounting, and invoicing.

HDR Services

1. Coordinate and manage the project team.
2. Prepare monthly status reports describing the following:

- a. Services completed during the month.
 - b. Services planned for the next month.
 - c. Needs for additional information.
 - d. Scope/schedule/budget issues.
 - e. Schedule update and financial status summary.
3. Prepare monthly invoices formatted in accordance with Contract terms.
4. HDR Project Manager will schedule biweekly project management coordination calls with the City Project Manager to review project scope, schedule, and budget issues.

City Responsibilities

1. Participate in biweekly project management coordination calls.
2. Timely processing and payment of invoices.
3. Review and process contract change requests and amendments, if needed.

Assumptions

1. The project (i.e., Tasks 1-8) will be completed within eleven (11) months after receiving Notice to Proceed. The anticipated project initiation is mid-February 2022, and the expected completion date is December 31, 2022.
2. Two (2) ½-hour long project management coordination calls will be held per month with one HDR staff in attendance.

Deliverables

1. Monthly status reports and invoices, including project schedule and budget updates (emailed in PDF format).
2. Project management coordination call summary notes (email).

Task 2 Identify Needs and Drivers

Objective

To identify the objectives that implementing reuse would address, as this will then inform the types and locations of reuse that would be of highest value to the City.

HDR Services

1. Review existing planning and analysis documentation that includes information regarding typical reuse drivers, including:
 - a. City's water system plan, to understand drinking water system needs.
 - b. City's general sewer plan, to understand wastewater management needs.
 - c. WRIA 15 watershed restoration and enhancement plan, to understand general water resource management needs.

- d. Other documents as identified by City staff as potentially of interest (e.g., items related to development of the City's Groundwater Management Plan, Climate Action Plan, and WWTP tertiary treatment reports).
2. Meet with City staff to discuss and organize needs/drivers.
3. Meet with other water/wastewater utility providers on or near the island to learn of potential needs and their interest in reuse. Up to three one-hour meetings are planned (e.g., with Kitsap County Sewer District #7, Kitsap Public Utility District, and Kitsap County).
4. Prepare Needs/Drivers memorandum, draft and final.

City Responsibilities

1. Provide City documents related to water and environmental resources planning.
2. Facilitate coordination with other utility providers.
3. Provide review comments on draft memorandum, within one (1) week of submittal.

Assumptions

1. HDR has a reasonable right to rely on information provided to HDR from the City for the use and preparation of this assessment and/or deliverables in this scope of services.

Deliverables

1. Meeting handouts to support needs/drivers discussion (Word or PDF format).
2. Needs/Drivers memorandum (draft and final, PDF format).

Task 3 Identify Reuse Opportunities

Objective

To identify potential reuse opportunities that align with the needs/drivers identified in Task 2.

HDR Services

1. Define available sources of wastewater for potential generation of reuse. This will involve assessing the quantity and quality of wastewater primarily from three sources: the City's Winslow Treatment Plant, Sewer District #7's Treatment Plant, and septic systems. Ranges of annual and seasonal volumes of wastewater available from these sources will be calculated, under current and projected 20-year future growth conditions. This will also involve review of recent/current reports on WWTP tertiary treatment and management of chemicals of emerging concern.
2. Identify types and locations of potential reuse, driven by the needs identified in Task 2 and the locations of source water defined above. For each potential use, annual and seasonal reuse volumes will be estimated, water quality requirements identified, and potential constraints and implementation/permitting needs described. Example uses to be potentially explored will include:
 - a. Turf and landscape irrigation. Data to be used in this analysis will include City water billing data and GIS mapping of parcel information.

- b. Groundwater recharge via infiltration. For this initial evaluation, existing data compiled as part of other efforts (e.g., the managed aquifer recharge analysis conducted for the WRIA 15 watershed restoration and enhancement plan, analyses presented in the City's Groundwater Management Plan) will serve as the basis for determining potentially feasible infiltration sites. (It is noted that the existing groundwater model is likely not developed at a scale that renders it of significant use to this effort.) Potential linkage with stormwater management facilities will also be explored.
 - c. Groundwater recharge via direct injection. This will only be explored if the needs/drivers assessment identifies a potential value in this, such as managing saltwater intrusion into drinking water wells.
 - d. Streamflow augmentation. The most feasible approach to this use is typically through infiltration into the shallow groundwater system. However, if the potential for direct augmentation appears possible, that method will also be considered.
 - e. Indoor uses. The potential for indoor reuse (e.g., toilet/urinal flushing, commercial cooling systems, etc.) is limited and is likely only feasible with future development as opposed to retrofit of existing infrastructure. Therefore, this analysis will consider options for these types of uses associated with new buildings/facilities that would be in proximity to other potential use locations.
3. Prepare draft Reuse Opportunities memorandum. This will contain descriptions of potential uses, tables summarizing key metrics including volumes of water reused, and location mapping. A preliminary screening-level qualitative assessment of the opportunities will be provided, based on a range of factors that will be developed collaboratively with City staff but are envisioned to include: needs addressed, volume of water reused, extent of infrastructure improvements required, permitting complexity, equity, and funding eligibility. The purpose of the screening-level assessment is to summarize information for discussion with other stakeholders and to gain an initial understanding for those opportunities that are likely to warrant further evaluation.
4. Facilitate a review meeting with City staff, up to two (2) hours long, to discuss the draft memorandum.
5. Prepare final Reuse Opportunities memorandum, based on feedback from the City.

City Responsibilities

1. Assist in coordinating this effort with the concurrent Winslow Wastewater Treatment Plant upgrade planning work.
2. Provide review comments on draft memorandum, within one (1) week of review meeting.

Assumptions

1. Future growth rates and demographics will be based on City planning data.
2. No costs will be generated as part of this work. Such analyses will come in a subsequent task.

Deliverables

1. Reuse Opportunities memorandum (draft and final, PDF format).

Task 4 Initial Community Engagement

Objective

To gain initial feedback on identified potential reuse opportunities from the City's Utility Advisory Committee.

HDR Services

1. Prepare meeting materials to support one meeting of the Utility Advisory Committee. This will include a presentation, handouts, and potentially map boards (if the meeting is in-person).
2. Support City during the meeting with the Utility Advisory Committee to discuss and refine reuse opportunities.
3. Prepare meeting notes, draft and final.

City Responsibilities

1. The City will be in the lead in facilitating the meeting with the Utility Advisory Committee, with support from HDR.
2. If meeting is to be held in person, arrange for meeting space.
3. Provide review comments on draft meeting notes, within one (1) week of receipt.

Assumptions

1. The existing Utility Advisory Committee will serve as the advisory group for this effort.
2. The Utility Advisory Committee meeting will be held in person, if that is consistent with City COVID-19 procedures at the time of the meeting and if the entire group is supportive of meeting in that fashion. However, if needed, the meeting will be held virtually. For budgeting purposes, HDR has included travel costs associated with up to three staff being present at the meeting, which is assumed to last up to two hours.

Deliverables

1. Meeting materials. Presentation (PowerPoint), handouts, graphics/map boards (optional).
2. Meeting minutes (draft and final; PDF format).

Task 5 Develop Refined Opportunities List

Objective

To refine the reuse opportunities list based on feedback from the City and the Utility Advisory Committee and identify specific opportunities and potential projects that warrant further evaluation.

HDR Services

1. Prepare a high-level cost benefit analysis of options, primarily focused on comparing the costs and benefits of implementing reuse versus tertiary treatment (e.g., nutrient removal) at

the WWTP for continued marine discharge. The costs developed for this analysis will be high-level, planning costs (i.e., AACE¹ pre-Class 5 opinions of probable project cost).

2. Prepare draft Refined Reuse Opportunities and Next Steps memorandum. This will include a ranking of the list of potential reuse opportunities based on criteria (to be determined jointly with the City), input from the City, and feedback from the Utility Advisory Committee. A subset of opportunities will be identified for which further definition/evaluation is recommended. The proposed scope of that further evaluation will be included, forming that basis for Task 6 of this work.
3. Facilitate a review meeting with City staff, up to two (2) hours long, to discuss the draft memorandum.
4. Prepare final Refined Reuse Opportunities and Next Steps memorandum, based on feedback from the City.

City Responsibilities

1. Provide review comments on draft memorandum, within one (1) week of review meeting.

Assumptions

1. The Refined Reuse Opportunities and Next Steps memorandum (draft and final) is expected to be no more than 30 pages in length.

Deliverables

1. Reuse Opportunities memorandum (draft and final; PDF format).

Future Tasks

Tasks 1-5 represent the early stages of this work, needed to define subsequent stages. The following represent potential future tasks that would build upon this work.

- **Task 6 – Detailed Reuse Opportunities Evaluation**
 - Refined project definition for those opportunities deemed most feasible through Task 5. This will include refined identification of infrastructure needs, as well as more detailed permitting requirements/timelines, funding approaches, and description of other project characteristics (e.g., community acceptance, equity, etc.)
 - Further coordination with other related planning efforts. E.g., it is envisioned that the Winslow WWTP upgrades evaluation and planning regarding compliance with the Puget Sound Nutrient General Permit will be advanced later this year to the point where the potential for implementing tertiary treatment upgrades (i.e., to produce Class A reclaimed water) is better known.
 - More detailed cost estimates (AACE Class 5 or Class 4 opinions of probable project cost) for reuse project components. This will likely focus on infrastructure needed to: a) convey reuse water to use sites; and, b) put the resource to use. The costs to produce reuse water of the appropriate quality may be developed,

¹ Association for the Advancement of Cost Engineering.

unless already being prepared under other work (e.g., the Winslow WWTP upgrades analysis).

- Continued Utility Advisory Committee engagement.

- **Task 7 – Cost/Benefit Analysis**

- Further quantification (where feasible) of the benefits of implementing select reuse options, including avoided costs associated with other improvements that may be needed if reuse is not implemented.
- More detailed comparison of costs and benefits in an economic analysis, to consider feasibility.
- Continued Utility Advisory Committee engagement and likely broader public outreach.
- Recommendation for pathway forward.

- **Task 8 – Reuse Implementation Plan**

- Depending on the outcome of Task 7, development of a reuse implementation plan, outlining a schedule of steps to advance the design and construction of needed infrastructure to support reuse.
- Development of other programmatic elements, such as community outreach/education materials, end user agreements, etc.

Schedule

This effort is anticipated to occur over the course of 2022. Anticipated schedule milestones are outlined in the table below. Note that Tasks 6-8 are not part of the initial contract authorization, and their timing is subject to change based on the outcome of Tasks 1-5.

Task / Milestone	Target Completion
Task 2 – Identify Needs/Drivers	March 31, 2022
Task 3 – Identify Reuse Opportunities	June 15, 2022
Task 4 – Initial Community Engagement (UAC meeting)	June 30, 2022
Task 5 – Develop Refined Opportunities List	July 31, 2022
Task 6 – Detailed Reuse Opportunities Evaluation	August – October 2022
Task 7 – Cost/Benefit Analysis	October – November 2022
Task 8 – Reuse Implementation Plan	December 2022

Fee

The fee breakdown associated Tasks 1-5 is summarized below. Future contract amendments will include fee for tasks beyond this.

Task	Fee
Task 1 – Project Management	\$ 14,133
Task 2 – Identify Needs/Drivers	\$ 15,883
Task 3 – Identify Reuse Opportunities	\$ 41,412
Task 4 – Initial Community Engagement	\$ 7,785
Task 5 – Develop Refined Opportunities List	\$ 16,486
Total	\$ 95,699

*Assumes all work is conducted in 2022. Expenses and subconsultant costs will be billed at a 5% markup.

HDR's billing rate ranges (for 2022) by staff category are summarized below.

Staff	Hourly Billing Rate Range (2022)
Project Manager / Senior Engineer	\$250-300
Senior Scientist	\$200-250
Staff Scientist / Engineer	\$150-200
Planner / GIS	\$125-150
Administrative Support	\$115-155
Senior Management / Principal	\$300-375



PUBLIC WORKS DEPARTMENT
MEMORANDUM

DATE: FEBRUARY 7, 2022
TO: CHRIS WIERZBICKI, P.E.
FROM: PETER CORELIS, P.E.
SUBJECT: SUNDAY COVE, LOWER LOVELL, WOOD AVENUE, & WING POINT
LIFT STATION IMPROVEMENTS – DESIGN AMENDMENT NO. 2

Amendment 2 is proposed to the existing professional services agreement with Skillings, Inc. for the design of the Sunday Cove, Lower Lovell, Wood Avenue, and Wing Point sewer lift station project. The City entered into the agreement on August 17, 2020, with an existing scope that included survey, design and environmental permitting for the following tasks: 1) abandonment of 2,500 feet of sewer beach main in West Eagle Harbor, 2) rehabilitation of three existing sewer lift stations, 3) construction of a new lift station at Wood Avenue with force main, and 4) construction of gravity and individual grinder pumps and side sewers to replace connections to the beach main. The total value of the existing contract is \$872,293. The City has spent \$723,812 equal to 83% of the contract amount to date, and there remains \$148,481 (17%) in the contract to be delivered. The amendment adds \$156,216 to bring the total contract value to \$1,028,509.

An amendment to the scope is needed to address several findings discovered during the design work.

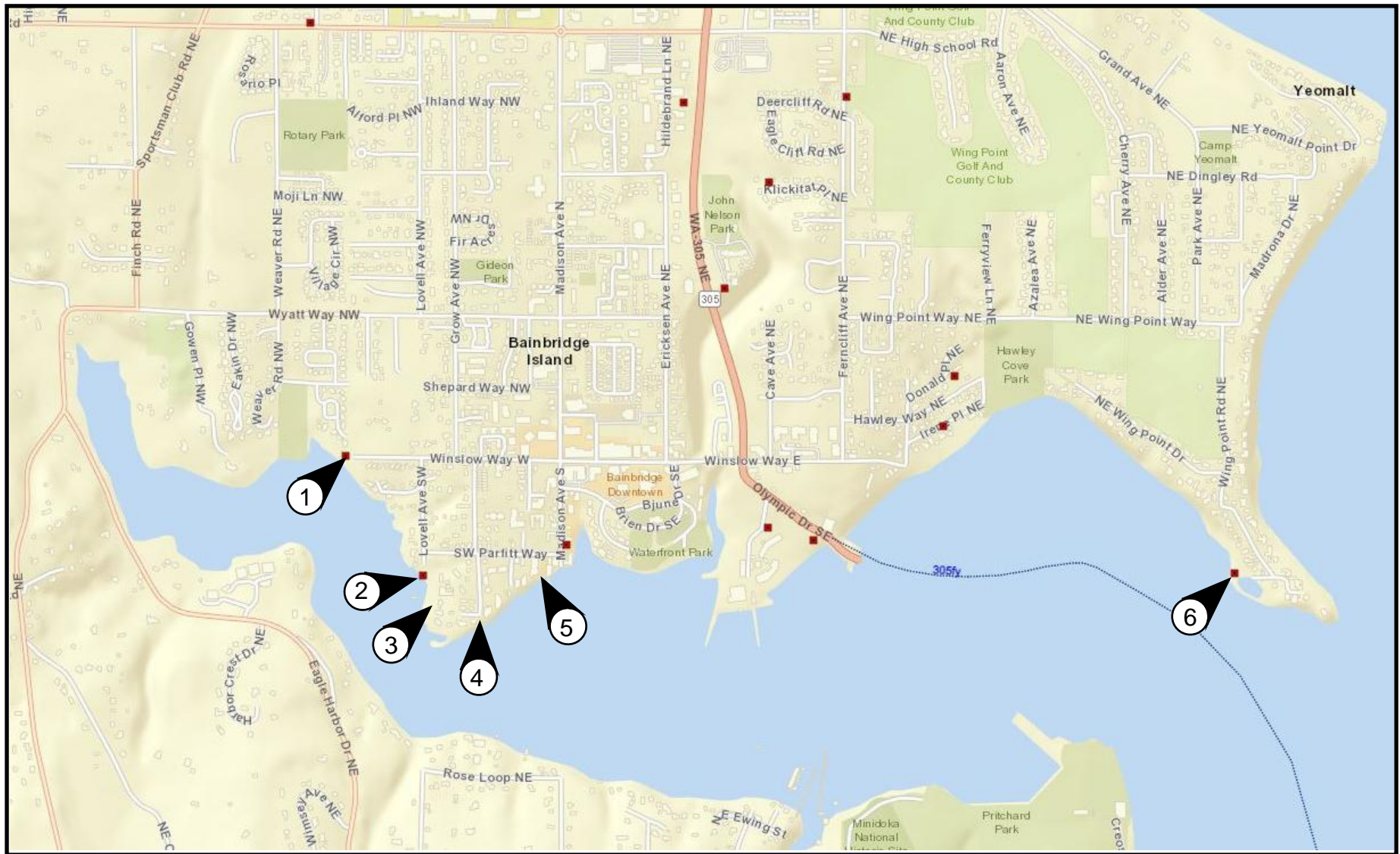
- Wing Point sewer lift station: a sewage spill occurred at the Wing Point sewer lift station on January 7, 2022, caused by a pump failure. The station was inundated with high tides and remained inaccessible until the tide receded to repair/reset the pump. An alternative upland location is being considered to replace the lift station to place it above projected sea-level rise elevations. We are expanding the replacement option to provide accessibility to the station during periods of tidal inundation that represent a greater risk than originally thought.
- Sunday Cove and Lower Lovell sewer lift stations are proposed to be replaced in lieu of rehabilitating the old equipment as they are reaching the end of their anticipated life. The stations were first installed in the late 1970's and are over 40 years old. Replacement of the

pump stations is estimated to be more cost effective than rehabilitating them over their 50-year lifespan. The change requires additional design work for the replacement equipment.

- The maintenance and operation cost of the new Wood Avenue sewer lift station would be reduced by intercepting fats, oils, and grease (FOG) in the sewer system at the source, three local area food establishments. FOG interceptor options for retrofits at the food establishments in the sewer basin will be evaluated and a cost estimate for design and installation will be included. The addition of interceptors benefits all downstream sewer network components and reduces blockage occurrences and maintenance activities and costs.
- 4 residential lots near the Lower Lovell lift station will be evaluated to update the original design, which was to install individual grinder pumps, to a simpler gravity sewer line. Additional survey and design work are needed to perform the evaluation. If operating the gravity sewer line is feasible it will result in fewer City operated/maintained grinder pumps and will reduce overall maintenance costs.
- The project is partially funded through a loan with the Washington State Public Works Board totaling \$2.5 million at a borrowing rate of 0.94% providing the City's utility expanded liquidity and flexibility to undertake the necessary capital improvements. The loan agreement language stipulated that State funds require a cultural resources review conducted by the Department of Archeology & Historic Preservation (DAHP). The review has identified potential cultural resources in the area and requires the City to conduct an archeological survey of all the disturbed areas within the project. The archeological survey adds \$32,770.54 to the contract amount.
- The design changes will require updates to the environmental permitting and survey.

(See attached map for project areas)

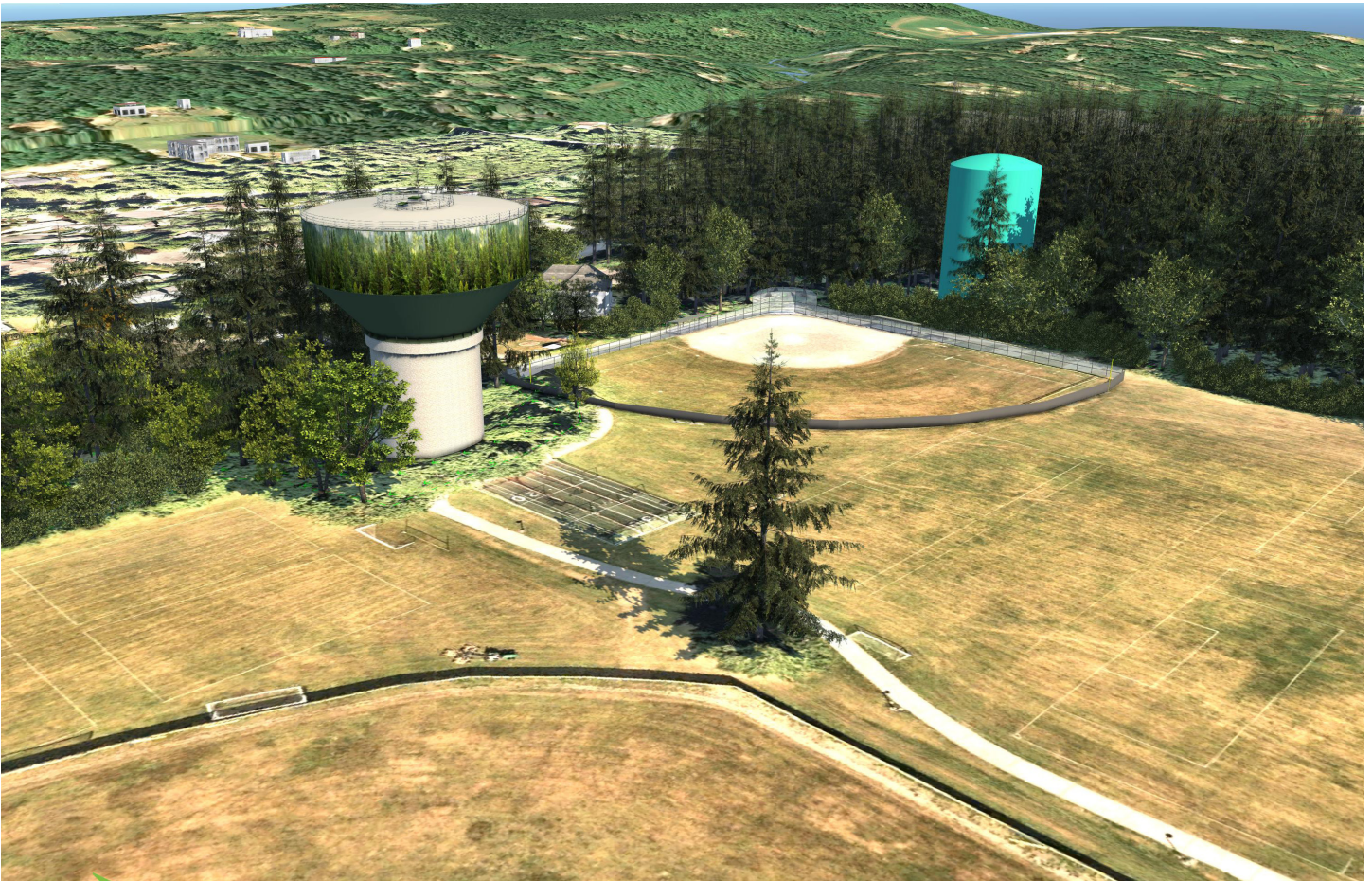
Sunday Cove, Lower Lovell, Wood Avenue, and Wing Point Lift Station Improvements - Amendment No. 2 Map



- 1 - Sunday Cove lift station replacement
- 2 - Lower Lovell lift station replacement
- 3 - Residential gravity sewer re-route evaluation
- 4 - Wood Avenue lift station site
- 5 - FOG interceptor evaluation site
- 6 - Wing Point lift station upland relocation and replacement

QUALIFICATIONS FOR THE CITY OF BAINBRIDGE ISLAND

Winslow Water Tank Replacement Project



December 17, 2021

December 17, 2021

Chris Munter, PE
City of Bainbridge Island
280 Madison Ave N
Bainbridge Island, WA 98110



RE: Qualifications for Winslow Water Tank Replacement Project

Dear Chris,

The City of Bainbridge Island (City) has made the critical decision to proceed with design and construction of a new reservoir to better serve their Winslow water system. When complete, the project will provide structurally sound and resilient water storage that provides improved operations and water quality for your rate payers.

Murraysmith has assembled a qualified team to successfully achieve the technical and managerial requirements of the Winslow Water Tank Replacement Project. We offer the broadest and most recent experience with reservoir planning and design in the region, and a no-nonsense, collaborative approach. We will deliver a cost-effective and operationally efficient project that exceeds your expectations.

- **Cohesive, Responsive Team of Water System Experts** – The proposed reservoir upgrades is a critical element in your system to improve service to your customers. To achieve your goals of optimizing the reservoir configuration and system operations, the City needs a team with expertise in elevated reservoir design and hydraulic system analysis that is familiar with your system. Our team provides this essential expertise to deliver innovative solutions and a long-lasting reservoir facility. Murraysmith and Peterson Structural Engineers (PSE) have been designing reservoirs together for over two decades. Matt Hickey, our lead technical expert, and Travis McFeron, the lead structural engineer, have been working together on similar projects for almost 20 years. Our Project Manager, Justin Ford, specializes in reservoir design and has provided engineering for over 10 elevated tanks and standpipes in the last 10 years. Mari Orama, our Project Engineer based out of our Tacoma office, has worked on two recent elevated tanks in the Puget Sound area. This team of reservoir focused experts knows all the key design details to provide a long lasting, low maintenance reservoir facility. This team recently completed designs for two elevated tanks for the City of Lacey and the Covington Water District. Our team is rounded out by local experts Lara Kammereck from Carollo Engineers, who is developing the City's Water System Plan and who brings extensive knowledge of City of Bainbridge Island water system operations, Nick McMurtrey, with broad stormwater management and design expertise, and Karmen Martin, a Kitsap County permitting specialist from ESA. We will leverage our broad experience and our team oriented approach to work closely with you to make critical decisions quickly and keep the project on track.
- **Optimal Solutions Determined Through a Holistic Approach to Reservoir Permitting and Design** – A systematic, holistic approach is needed to arrive at key decisions early on in the project regarding and developing a site layout that addresses site constraints and permitting requirements. Through the successful completion of dozens of similar projects, our team has developed a proven approach to effectively assess project constraints, efficiently address challenges, and systematically make decisions. Our team is adept at assessing hydraulic operations of complex water systems and preparing designs to optimize system operations. We will work closely with you to efficiently evaluate constraints and possible alternatives to help you make critical decisions and arrive at optimized solutions for your project which provide for long-term storage needs.
- **Collaborative Approach** – We truly enjoy collaborating with our clients and working together to solve project challenges. Our approach includes close coordination and frequent communications with you through the process to achieve your vision for the project.

As Project Manager, I will provide direct coordination with you and other City staff to see that objectives are met. We look forward to partnering with you to successfully deliver this project. If you have any questions regarding this submittal of qualifications, please contact me at 503.225.9010 or at justin.ford@murraysmith.us.

Sincerely,

Murraysmith

A handwritten signature in blue ink that reads "Justin Ford".

Justin Ford, PE | Project Manager

A handwritten signature in blue ink that reads "Matt Hickey".

Matt Hickey, PE | Principal-in-Charge

PROFESSIONAL QUALIFICATIONS OF THE FIRM



Murraysmith's expertise in every stage of a tank's life cycle—from planning and siting, design and construction, to maintenance, repair, and rehabilitation—and our approach to each project provides holistic solutions that are cost-effective and stand the test of time.

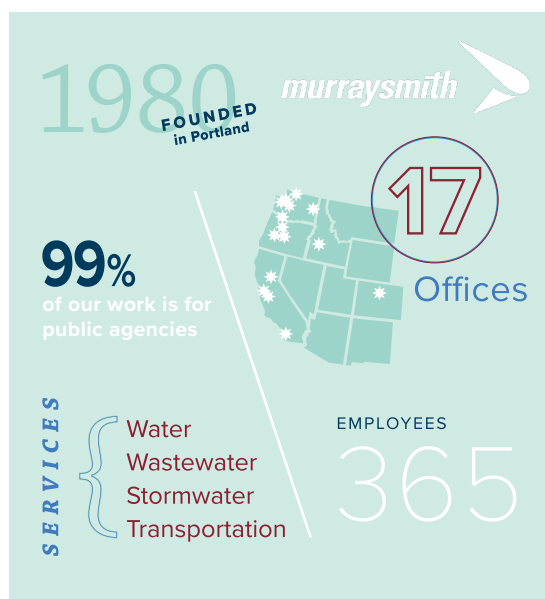
Demonstrated Ability to Complete Quality Work for Public Agency Capital Improvement Projects

Murraysmith was founded with the key mission of providing high-value engineering services to public agencies. Staying true to this mission, 99 percent of our current business is for public sector clients. Many of the region's public agencies depend on Murraysmith to provide high-quality solutions to their complex capital improvement projects. This is due to our proven track record, dependability, strong sense of client loyalty, and our absolute commitment to excellent service. We work as your partner to develop and maintain your trust. The City of Bainbridge Island can rely on our services, knowing that your community will benefit from solid design that will yield long service life and efficient operation of the Winslow Water Tank replacement.

Firm Qualifications

As a regional leader in water reservoir engineering, design, evaluation, and construction, Murraysmith has successfully completed over 150 reservoir-related projects since 1980. Our broad and extensive experience offers the City of Bainbridge Island the highest value. Through our work assessing existing reservoirs, we have discovered that certain design approaches result in corrosion and other issues that can reduce service life. We document these issues to make sure our designs minimize maintenance and life-cycle costs and extend a tank's service life.

Our experience also includes designing site improvements on constrained sites and developing control and operational schemes to optimize functionality of the tank system. Using proven innovations, combined with extensive direct experience, we efficiently deliver economical, durable reservoir solutions.



The Pleasant Home Water District Reservoirs, shown below, were completed in 2016 including adding a 0.75 MG tank to a constrained site and seismic rehabilitation of the existing 0.6 MG tank.



KEY PERSONNEL/PAST PERFORMANCE

TEAM ORGANIZATION

Murraysmith is committing a team of highly experienced and capable staff for the Winslow Water Tank Replacement Project. The key proposed team members have been significantly involved in all of Murraysmith's water storage tank design projects in Washington. The organizational chart identifies roles and responsibilities of key team members.

SUBCONSULTANTS

Murraysmith routinely teams with specialty subconsultants to provide the best available talent at optimal value. We engage each firm with a clear set of well-understood expectations, and this efficiency extends directly to our interactions with your staff. We selected this team due to their expertise, their local knowledge, and for some of them, their experience working in the area or directly for the City. These specialty consultants are experts in their field, provide great efficiencies and are dedicated to customer service like the Murraysmith team.



JUSTIN FORD, PE | PROJECT MANAGER

Justin will serve as your go-to contact and will see that this project runs smoothly and consistently meets your needs.

Justin is a water storage tank leader at Murraysmith and has served in a variety of planning, design, and construction administration roles on water system projects involving water storage, supply, and distribution for public agency clients throughout the Northwest. Justin has managed many challenging and multidisciplinary projects including reservoirs of all different types and materials, site development efforts of all different complexities, well houses and pump station buildings, and various different sizes and materials of distribution and transmission pipelines. Justin employs a straight-forward approach to project management and proactive communication with owners and all project stakeholders which has proven to result in project success.

SELECT PROJECT EXPERIENCE

WELL 3 ELEVATED TANK REPLACEMENT, CITY OF IDAHO FALLS, ID;

Project Engineer

Justin is currently leading the design and permitting efforts for a new 1.0 MG composite elevated tank for the City of Idaho Falls to replace the existing multi-column elevated tank that serves the City's main pressure zone. Murraysmith was selected by the City to provide design, permitting, bidding, and construction phase services for the elevated tank including site integration and stormwater facilities in downtown Idaho Falls. The pre-design effort included evaluating three potential sites and designing the connecting piping to the well that supplies the tank and piping connecting to the distribution system. Murraysmith supported the public involvement effort for this highly visible project by working with the public and City Council, providing renderings of the proposed tank at each site and other materials. An evaluation of the most cost competitive tank style was also conducted, with a composite elevated tank ultimately being selected. The existing reservoir will be demolished as part of the overall project.

TERRY CARGIL RESERVOIR, CITY OF LACEY, WA; *Technical Advisor*.

Justin provided project design assistance and technical reviews for a new 1.25 MG composite elevated tank for the City of Lacey. Murraysmith was selected by the City to perform design, bidding, and construction services for the elevated tank. The tank site is in a residential neighborhood, requiring collaborative public involvement with the City to ensure good neighbor practices were specified for during construction as well as the final built site condition. The project required creative solutions to accommodate a constrained site and includes standard tank site features such as water and drainage piping, stormwater detention, paved access road and landscaping features. The tank site is only 180 feet by 181 feet and required creative solutions for tank placement, site access, and constructibility concerns, including project sequencing requirements to be able to build the tank.

CASCADE WELL NO. 7, GROUNDWATER DEVELOPMENT PROJECT PACKAGE NO. 1; ROCKWOOD WATER PUD, *Project Manager*.

Justin led the Murraysmith and subconsultant team through design, permitting, and bidding of Package No. 1, and is currently providing engineer of record services to the Murraysmith construction management team. Features of the well house site design include a 1,000 kW standby power generator and a new concrete reservoir that will be the tallest of its kind in the region. The project also included phased pipeline improvements due to a congested urban street corridor and the need to keep the existing distribution main in service until the new main is constructed and online. The project required land use, right-of-way and building permitting through the City of Gresham, OHA Plan Review for the new reservoir and well house, and DEQ 1200-C permitting for all aspects.



YEARS OF EXPERIENCE: 12

EDUCATION:

- BS, Civil Engineering, Montana State University

LICENSES:

- Professional Engineer - OR, WA, ID & CO

PROFESSIONAL ACTIVITIES:

- National Kenneth J. Miller Award Winner, 2018
- Chair of AWWA-PNWS, NW Oregon Water For People Committee

KEY EXPERTISE:

- Project management
- Water system planning & design
- Reservoir design & construction
- Reservoir water quality & mixing systems
- Water pipelines
- Pump stations
- Reservoir rehabilitation
- On-site engineering and construction inspections
- Water transmission & distribution system piping
- Project cost estimating
- Shop drawings & submittals

Why Justin?

- ✓ Proven to deliver projects on time and within budget
- ✓ Proactive communicator with City staff
- ✓ Understands project constructibility needs



MATT HICKEY, PE

Principal-in-Charge/Technical Advisor

YEARS OF EXPERIENCE: 29

EDUCATION: BS, Civil Engineering, University of Portland

REGISTRATION: Professional Engineer - WA & OR

As Murraysmith's lead reservoir expert, Matt is broadly experienced with all types and styles of water reservoirs. He is experienced with state-of-the-art technologies for ensuring water circulation in large reservoirs and maintaining distribution system water quality through proper reservoir operation. In the past decade, Matt has led 10 reservoir projects in Oregon and assisted with eight projects in Washington. Matt has served as project manager, technical advisor, or project engineer on over 20 new reservoir projects ranging in size from 0.13 million gallons (MG) to 6.0 MG. He has also served in these roles on reservoir siting evaluations, rehabilitations, and water quality improvements.

SELECT PROJECT EXPERIENCE

- **Lakeshore Reservoir Replacement**, Clark Public Utilities, WA
- **Terry Cargil Reservoir**, City of Lacey, WA
- **Tank 4 Replacement**, Covington Water District, WA
- **Hawks Prairie Reservoir Assessment**, City of Lacey, WA
- **2.0 MG Reservoir Improvements**, North City Water District, WA
- **Upper Mountain View Pressure Zone Improvements & 400,000 Gallon Elevated Water Storage Tank**, City of Shelton, WA
- **1.29 MG Kenndale Reservoir**, City of Renton, WA
- **Horizon View #1 Reservoir/Pump Station**, City of Bellevue, WA
- **Woodland Water Storage Tanks Improvements**, City of Corvallis, OR
- **Reservoir Consulting Services**, City of Enumclaw, WA
- **2.0 MG Chena and 0.75 MG Apex Reservoirs**, Silverdale Water District, WA



MARI ORAMA, EDD, PE

Project Engineer

YEARS OF EXPERIENCE: 16

EDUCATION: EdD, Organizational Leadership, Nova Southeastern University

MS, Civil Engineering, University of Washington

BS, Environmental Engineering, Oregon State University

BA, Environmental Engineering, Oregon State University

REGISTRATION: Professional Engineer - WA

Mari joined Murraysmith's Tacoma office after serving as a project engineer with another local engineering firm and as an engineering professor in higher education. She has ten years of experience in water, stormwater, and wastewater design and planning projects for municipalities throughout Washington. Mari's diverse experience allows her to be an adaptable team member who is skilled in coordinating and communicating with diverse teams and approaching challenging problems with innovative solutions.

SELECT PROJECT EXPERIENCE

- **Tank 4 Replacement**, Covington Water District, WA
- **Federal Emergency Management Agency (FEMA), Pre-Disaster Mitigation (PDM) Grant Program Application For Tank 4 Resiliency**, Covington Water District, WA
- **Terry Cargil Reservoir**, City of Lacey, WA
- **Cherry Crest Pump Station Replacement**, City of Bellevue, WA
- **Water System Plan Update with Risk & Resiliency Study and Emergency Response Plan**, City of Lacey, WA
- **Somerset Reservoir No-1 Decommissioning**, City of Bellevue, WA
- **Water System Plan Update with Risk & Resiliency Study**, City of Duvall, WA
- **Reservoir Structural/Seismic Evaluation**, City of Bellevue, WA



**NICK MCMURTREY, PE,
LEED AP, ENV**
Stormwater Design Lead

YEARS OF EXPERIENCE: 18

EDUCATION: BS, Civil Engineering, Oregon State University

REGISTRATION: Professional Engineer - OR, WA & CO

Nick will serve as a critical project resource supporting stormwater/CIP design and management functions as a specific assignment requires. Nick is Murraysmith's firmwide Stormwater Technical Manager and provides you with this specialized expertise for local, state, and federal requirements. He's experienced in the planning, design and construction of various types of stormwater projects, including pipeline design, low impact development, regional treatment and detention systems and integration with other adjacent utilities. Nick has worked on 17 stormwater projects over the course of his career, incorporating design considerations for permit compliance, constructability and on-going maintenance. He brings a practical approach towards stormwater management, seeking to balance the cost of improvements in meeting with regulatory and owner requirements.

SELECT PROJECT EXPERIENCE

- **D Avenue Improvements**, City of Lake Oswego, OR
- **Jennings Avenue: OR 99E To Oatfield Road**, Clackamas County, OR
- **NW Springville Road Improvements**, Washington County, OR
- **Villa Road Improvements Design Haworth to Crestview**, City of Newberg, OR
- **Stormwater Master Plan**, City of Sherwood, OR
- **Frog Pond Concept Plan**, City of Wilsonville, OR
- **Stormwater Master Plan**, City of Pendleton, OR
- **Stormwater Quality Master Plan**, City of Louisville, CO
- **NW Cornelius Pass Road: US30 - NW Kaiser Road**, Oregon Department of Transportation (ODOT)/ Multnomah County, OR
- **NW Jackson School Road, Meek Road, and Scotch Church Road Roundabout**, Washington County, OR



TRAVIS MCFERON, SE, PE
Structural Engineer

PETERSON STRUCTURAL ENGINEERS

YEARS OF EXPERIENCE: 21

EDUCATION: MS, Civil Engineering, Portland State University

BS, Civil Engineering, Portland State University

REGISTRATION: Professional Structural Engineer - WA, OR & CA

Professional Civil Engineer - WA, OR & CA

Travis is a Senior Principal at PSE and has over 20 years of experience, much of which is centered on PSE's reservoir and pump station work in the Pacific Northwest. Travis' tank design experience is extensive, ranging from new designs to existing tank rehabilitations of various tank types including welded steel and bolted steel, prestressed concrete and reinforced concrete. His experience includes over 200 reservoir assessment, retrofit and design projects, the majority of which has been completed when teaming with Murraysmith.

SELECT PROJECT EXPERIENCE

- **Lakeshore Reservoirs Steel Tank Evaluation & Replacement**, Clark Public Utilities, WA
- **Terry Cargil Reservoir**, City of Lacey, WA
- **Idaho Falls (1.0 MG) Composite Elevated Steel Reservoir**, City of Idaho Falls, ID
- **Lusted (0.1 MG) Elevated Steel Reservoir**, Lusted Water District, OR
- **Woodland (0.13 MG) Elevated Steel Tank Improvements**, City of Corvallis, OR
- **CVWD (.05 MG) Elevated Steel Tank Evaluation**, Coachella Valley Water District, CA
- **Milwaukie (1.5 MG) Elevated Steel Reservoir Seismic Upgrade**, City of Milwaukie, OR
- **Palatine Hill (0.5 MG) Elevated Reservoir Upgrades**, Lake Oswego, OR
- **Raleigh (0.5 MG) Elevated Steel Reservoir Seismic Upgrade**, Raleigh Water District, OR



DILA SAIDIN, PE, PHD
Geotechnical Engineer

HWA GEOSCIENCES

YEARS OF EXPERIENCE: 20

EDUCATION: PhD, Civil Engineering, University of Washington

REGISTRATION: Professional Engineer - WA

A practicing engineer with 10 years of working experience in the Pacific Northwest, Dr. Saidin has been involved in many projects spanning various disciplines that include geotechnical and geo-structural. She has been involved with multiple tank projects, including elevated tanks such as the Union Gap Water Tank, in Union Gap, Washington. Dila's teaming experience with Murraysmith includes several past and on-going projects in Edmonds, Enumclaw, Bellevue, and Seattle.

SELECT PROJECT EXPERIENCE

- **Terry Cargil Reservoir**, Lacey, WA
- **1.29 MG Kenndale Reservoir**, City of Renton, WA
- **Bellevue Reservoir Structural/Seismic Evaluation**, Bellevue, WA
- **Pikes Peak Reservoir Replacement (Design & Construction)**, Bellevue, WA
- **Horizon View 2 Reservoir and Pump Station Replacement**, Bellevue, WA
- **Monroe DOC Reservoir No.2**, Monroe, WA
- **Somerset Reservoir No. 1 Decommissioning**, Bellevue, WA
- **Five Corner Reservoir**, Edmonds, WA
- **Water Storage Reservoir**, Enumclaw, WA



LARA KAMMERECK
Hydraulics | Operational Analysis

CAROLLO ENGINEERS

YEARS OF EXPERIENCE: 29

EDUCATION: MBA, Operations, Seattle University
 BS, Civil Engineering, Gonzaga University

REGISTRATION: Professional Engineer - WA & OR

Lara is a civil engineer with more than 29 years of experience focused on water and wastewater master planning for public utility systems. She specializes in master planning and demographic analysis, and she has been involved in more than 50 comprehensive plans, master plans, and modeling projects. She has also worked on various water resources projects including source of supply analysis, emergency supply study, hazard mitigation plans, and vulnerability assessments. Her technical expertise also includes conceptual and preliminary design of pipelines and pump stations for both water and wastewater systems.

SELECT PROJECT EXPERIENCE

- **Water System Plan Update**, City of Bainbridge Island, WA
- **Water System Plan Update**, City of Renton, WA
- **Comprehensive Water System Plan Update**, Highline Water District, WA
- **Water Modeling On-Call Services**, City of Auburn, WA
- **Comprehensive Water System Plan Update**, City of Tumwater, WA
- **Integrated Comprehensive Sewer & Water Master Plans**, City of Tukwila, WA
- **Judy Reservoir Water Treatment Plant Facility Plan**, Skagit County PUD No. 1, WA
- **Water System Plan Update**, Woodinville Water District, WA
- **Water System Plan Update**, City of Gig Harbor, WA
- **Comprehensive Water Plan Update**, City of Auburn, WA
- **Water System Comprehensive Plan Update**, City of Shelton, WA



ALENA THURMAN, PE
Hydraulics | Operational Analysis



KARMEN MARTIN
Land Use Permitting

CAROLLO ENGINEERS

YEARS OF EXPERIENCE: 10

EDUCATION: MS, Civil Engineering, University of Colorado, Boulder

BS, Natural Science, University of Puget Sound

BS, Mathematics, University of Puget Sound

REGISTRATION: Professional Engineer - WA, OR & CA

Alena Thurman has 10 years of civil engineering experience in planning and design of water and wastewater infrastructure projects. As Carollo's Oregon planning lead, she focuses on water and sewer system master planning projects.

SELECT PROJECT EXPERIENCE

- **Water System Plan Update**, City of Bainbridge Island, WA
- **Water System Plan Update**, City of Renton, WA
- **Comprehensive Water System Plan Update**, Highline Water District, WA
- **Comprehensive Water System Plan Update**, City of Tumwater, WA
- **Water System Plan Update**, City of Camas, WA
- **Water System Plan Update**, Woodinville Water District, WA
- **Water Distribution and Treatment Facility Master Plan**, City of Corvallis, OR
- **Water System Comprehensive Plan Update**, City of Vancouver, WA
- **Comprehensive Water Plan**, City of Tukwila, WA
- **Issaquah Water System Plan Update**, City of Issaquah, WA
- **Lakehaven Water System Plan**, Lakehaven Water & Sewer District, WA
- **Water System Master Plan Update**, Clackamas River Water District
- **Risk & Resiliency Assessment (RRA)**, Highline Water District, WA
- **Mansion Hill Reservoir Relocation Project**, Highline Water District, WA

ENVIRONMENTAL SCIENCE ASSOCIATES

YEARS OF EXPERIENCE: 20

EDUCATION: MUP, Master of Infrastructure Planning & Management, University of Washington

BS, Environmental Policy and Assessment, Western Washington University

AFFILIATION: Washington Chapter American Water Resources Association

Karmen is a senior environmental planner with 20 years of experience specializing in regulatory compliance strategies including federal, state, and local permitting, as well as NEPA/SEPA documentation. She manages teams of permit specialists, biologists, planners, and cultural resource specialists in the development of permit submittals, permit tracking systems, BAs, cultural resource surveys, habitat inventories, and other technical studies required for environmental and land use review. Karmen's primary focus is wastewater treatment and conveyance, CSO projects, and related infrastructure projects, and she has worked on numerous large and complex projects throughout the region. She regularly assists clients with USACE Section 10/404, Hydraulic Project Approvals (HPAs), shoreline permits, and conditional use permits.

SELECT PROJECT EXPERIENCE

- **Sunset Heathfield Pump Station**, Seattle, WA
- **Lakehaven Utility District, Pump Station 33**, Federal Way, WA
- **Kitsap Wastewater Infrastructure Task Force**, Port Orchard, WA
- **Blaine Wastewater Equalization**, Blaine, WA
- **Blaine Lighthouse Point Water Reclamation**, Blaine, WA



JAMES MITCHELL, PE | ELECTRICAL ENGINEER LEAD

INDUSTRIAL SYSTEMS

YEARS OF EXPERIENCE: 35

EDUCATION: Engineering, Lewis and Clark College, PSU

REGISTRATION: Professional Engineer - WA, OR, CA & OR

James is an experienced electrical utility system planner and designer. Since 1967, he has been actively involved in outdoor station layout, bus work and grounding, as well as indoor control, relay, and wiring projects for industrial and utility projects. He has provided professional electrical design services on several corporate headquarters and campus-style R&D and manufacturing facilities. James has also been particularly active in the planning and design of technology intensive facilities involving computer and telecommunication systems.

SELECT PROJECT EXPERIENCE

- **Maple Valley City Hall Generator Addition**, Maple Valley, WA
- **Mercer Island Booster Pump Station Generator Replacement**, Mercer Island, WA
- **Great Western Malting**, Vancouver, WA
- **Bonneville Power Administration**, Vancouver, WA



FOUAD ELGHARABLI, RLA | LANDSCAPE ARCHITECT

MURRAYSMITH

YEARS OF EXPERIENCE: 27

EDUCATION: MLA, University of Oregon; BS, Horticulture, University of Alfath

REGISTRATION: Landscape Architect - OR

Fouad excels at collaborating in a dynamic team to produce designs, construction documents, and provide construction management during implementation. Fouad brings expertise in applying appropriate design theories that consider diverse environmental, ecological, and recreational challenges to develop concept designs suitable for your project setting. Well-versed in Washington County's landscaping and screening requirements, Fouad will incorporate these standards for low maintenance plantings into our project designs.

SELECT PROJECT EXPERIENCE

- **Taylor's Ferry Reservoirs Improvements, Conceptual Design Report**, TVWD, OR
- **2.0 MG East Hills Reservoir & Booster Pump Station**, City of Seaside, OR
- **6.0 MG 152nd Avenue Reservoir**, CRW, OR



GARY CHAPMAN, PLS | SURVEY LEAD

AES CONSULTANTS

YEARS OF EXPERIENCE: 30

EDUCATION: BS, Criminal Justice, Washington State University

REGISTRATION: Professional Land Surveyor - WA

Gary brings over 30 years of land surveying and management experience to the team. After graduating from Washington State University, Gary began his full-time career in land surveying with AES Consultants. Gary is a licensed land surveyor and will oversee all project research, boundary computing, coordinate personnel and will maintain quality control throughout the project. Gary has been project manager for many large-scale sewer upgrade projects for the City of Bremerton and Kitsap County. He has supervised the surveying of over 10 different sewer pump stations and at least 20 miles of road topographic mapping for sewer and water main upgrades in just the last several years.

SELECT PROJECT EXPERIENCE

- **CW-4 and OF12**, City of Bremerton, WA
- **City of Port Orchard Well Site 11**, Port Orchard
- **Pump Station 1, 6, 8, and 18, Kitsap County**, Silverdale/Bremerton, WA
- **Eastside Beach Main Replacement**, City of Bremerton, WA

Quality Coatings Inspection and Consulting, Inc. (QCIC) is a third-party NACE certified coatings inspection firm that provides services on projects throughout the Pacific Northwest.

Sonny Mauricio, Coating Inspection NACE International 11 Years of Experience	Completed over 20 potable water steel reservoirs, both new construction and re-coats.	<ul style="list-style-type: none"> • 5 MG Potable Water Reservoir Interior/Exterior Recoat, Northshore Utility District, WA • 4.5 MG Potable Water Reservoir Interior/Exterior Recoat, Covington Water District, WA • 4.2 MG Potable Water Reservoir Interior/Exterior Coatings, City of Oak Harbor, WA
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Archaeological Services (ASCC) provides cultural resource review on water infrastructure projects in Southwest Washington, including several projects with Murraysmith.

Alexander Gall, RPA Cultural Resources Lead MA, Anthropology, PSU; BA, Anth., Vassar College 18 Years of Experience	Expert in cultural resources at local/state level, with extensive experience on a range of large-scale, city-wide water projects.	<ul style="list-style-type: none"> • NE 164th Water Main, CPU, WA • Well 17 Project, City of Camas, WA • Bingen Wastewater Treatment Plant Improvements, Bingen, WA • Well #6 Project, Battle Ground, WA • Water Station 5 Project, City of Vancouver, WA
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Arborscape is a locally-owned-and-operated full tree care service company that offers certified arborists and a full staff of experienced tree workers who can handle jobs of any size.

John Buttrell, ISA Arborist AS, Horticulture, Haywood College 37 Years of Experience	John is a ISA-certified arborist and tree risk assessor, founder of Arborscape, and an expert in Clark County tree care.	<ul style="list-style-type: none"> • Urban Forestry/Operations, City of Vancouver, WA • Construction Services, Vancouver School District, WA • Historic Tree Preservation, Vancouver Historic Trust, WA • 2020 Vancouver Barracks Restoration, NPS, WA • North Junction Pump Station/Trunk, CRWWD, WA
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Barney & Worth has 40 years of experience providing public clients with services ranging from public involvement and strategic planning, to funding support and grant writing.

Chris Hoffman Public Involvement MS, Conservation Social Sciences, University of Idaho, Moscow, ID BA, English Literature, University of New Hampshire, Durham, NH 22 Years of Experience	Chris has years of experience in strategic planning, community engagement, facilitation, project management, planning, and communications in the Seattle area.	<ul style="list-style-type: none"> • Brightwater Wastewater Facility Siting EIS, King County Wastewater Treatment Division • Bellevue Utilities On-Call, City of Bellevue Utilities Department • Mercer Corridor Program (East and West Phase Design), Seattle Department of Transportation • Coal Creek Sewer Trunk Line Upgrade, King County Wastewater Treatment Division • Stormwater Utility Planning, San Juan County • Portage Bay Park, Seattle Parks and Recreation • Broad Street Substation Inductor Project, Seattle City Light
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S&B Inc. is a design, system integration, and service company providing turnkey services in the fields of SCADA, telemetry, instrumentation & control, and management reporting for the water and wastewater markets.

Jim Swanson, PE System Integration BS, Mechanical Engineering, Seattle University 27 Years of Experience	Jim has extensive experience with the City of Bainbridge Island SCADA systems including the overall system design and implementation of numerous PLC based Remote Telemetry Units across the City's infrastructure.	<ul style="list-style-type: none"> • WWTP SCADA & Automation Upgrade, Bainbridge Island • 2015 Sewer and Water upgrades, Bainbridge Island • Upgrades to A Street & Yakima Well Sites, Parkland Light & Water • Wholesale Station Updates, Lakewood Water District • 2019 Upgrades, Bainbridge Island • Wholesale Booster Pump Station #2, Lakewood Water District • Kitsap PUD Intertie Project, Bainbridge Island • Grow and Wyatt Phase 1, Bainbridge Island • View Road, Lakewood Water District
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Project Management Approach

Outlined below is a description of how the team will be organized and led.

Our approach to team organization involves Murraysmith serving as the lead consultant, providing the overall management for the project and managing the internal team and the specialty subconsultants.

The Murraysmith internal team consists of experienced engineers leading the technical aspects of key portions of the project including the reservoir design, site piping and civil work and stormwater management.

Murraysmith has led dozens of similar projects, including four current elevated tank projects for the City of Lacey, the Covington Water District, and Clark County PUD in southwest Washington, and has worked with this team on several of these over the last 20-plus years.

Project Management Approach

Communication, collaboration and teamwork – start to finish.

Our approach to project management is summarized as follows:

- Maintain experienced team throughout the project
- Conduct frequent internal check-ins to verify high quality and compliance with schedule and budget
- Coordinate subconsultant work to project quality and fully integrated designs
- Integrate key industry advancements, creative ideas, quality products and lessons learned
- Manage budget and schedule with regular updates to the City
- Closely monitor contract status and performance and provide monthly reporting with invoicing
- Complete deliverable reviews by project manager and technical advisor/principal-in-charge prior to submittal

The following table outlines the experience and relationship working with each of the key team members.

Team Member	Relationship & Experience Working Together
Peterson Structural Engineers	PSE has worked with Murraysmith on reservoir projects for over 30 years. Travis McFeron and Matt Hickey have collaborated on these projects for over 20 years and Justin has been working on these projects for over 10 years. Recent elevated tank projects designed with PSE include the Terry Cargil Reservoir for the City of Lacey, Reservoir 4 for the Covington Water District and the Lakeshore Reservoir for Clark County PUD.
HWA GeoSciences	HWA has assisted Murraysmith on several projects in the region including the recent Kennydale Reservoir for the City of Renton and the Terry Cargil Reservoir for the City of Lacey.
Environmental Science Associates	ESA has worked with Murraysmith for over 20 years and recently assisted us with reservoir projects including the elevated tank for the Covington Water District.
Carollo Engineers	Carollo has collaborated with Murraysmith on projects for over 15 years and recently worked with Justin and Matt on elevated reservoir designs for the City of Shelton and the Covington Water District.
AES Consultants	AES Consultants has assisted Murraysmith with surveying on other similar recent projects including providing survey for Murraysmith project in Kitsap County over the last several years.
Industrial Systems, Inc.	Murraysmith has worked with Industrial Systems team for several years. Industrial Systems (IS) completes electrical designs for nearly all Murraysmith projects in the Northwest. IS is currently assisting us with projects for the City of Bellevue, the City of Tacoma, the City of Lacey, and several other municipalities in the region.
S&B, Inc.	Murraysmith has worked with S&B for over 30 years. We have collaborated on several reservoir and water system improvements projects similar to yours. Our teams work together well to integrate the water system facilities with control system and overall operations.
QCIC ASCC Arborscape Barney & Worth	Murraysmith has an ongoing working relationship with all of these specialty firms to deliver quality projects for our public clients in the Northwest.

Experience on Similar Projects

Members of the proposed team have designed more than 30 new reservoirs in the past 10 years, including four elevated tanks and two standpipes, in addition to assessment and upgrades to over 20 standpipes and elevated tanks. The City of Bainbridge Island can be confident in our team because we know the technical requirements of the project and have a strong history of delivering projects as a team, allowing us to meet the budget and schedule requirements of the project.

We recently completed projects similar to yours, as highlighted in the table below, which demonstrates our proposed team's relevant new steel reservoir projects and tank assessments. Following the table are detailed project descriptions for key projects we have completed with aspects similar to your proposed reservoir facility.

Client	Project	Size (MG)
New Elevated Steel Tanks		
Clark Public Utilities, WA	Lakeshore Reservoir Replacement	3.0 x 2
City of Lacey, WA	Terry Cargil Reservoir	1.25
City of Shelton, WA	Upper Mountain View Pressure Zone	0.4
Covington Water District, WA	Tank 4 Replacement	1.5
Lusted Water District, OR	Elevated Water Tank Replacement	0.10
Portland Water Bureau, OR	Forest Park High Tank	0.5
City of Idaho Falls, ID	Well 3 and Well 19 Reservoirs (Pre-Design)	1.0 & 2.0
City of West Linn, OR	Rosemont Reservoir	0.4
New Ground-Level Steel Tanks & Standpipes		
Pleasant Home Water District, OR	750,000-gallon Reservoir (Standpipe)	0.75
City of Renton, WA	Kennydale Reservoir (Standpipe)	1.29
City of Fairview, OR	City Water Reservoir #3 (Standpipe)	3.5
Lewis County, WA	Vader-Enchanted Valley Water Reservoir	0.2
City of Bellevue, WA	Horizon View #1 Reservoir and Pump Station	0.3
Silverdale Water District, WA	Apex and Chena Reservoirs	0.75 & 2.0
City of Seaside, OR	4.0 MG Reservoir	4.0
Recent Existing Standpipes Rehabilitated		
Pleasant Home Water District, OR	600,000 Gallon Reservoir Seismic Upgrades	0.6
City of Gresham, OR	Gabbert Reservoir Seismic Upgrades	0.2
Rockwood Water PUD, OR	Cascade Reservoir Improvements	5.0
Existing Elevated Tanks Rehabilitated		
City of Bellevue, WA	Pikes Peak Reservoir Upgrades	1.25
City of Corvallis, OR	Woodland Reservoir Seismic Upgrades	0.125
Palatine Hill Water District, OR	Palatine Hill Reservoir Seismic Upgrades	0.50
Raleigh Water District, OR	Reservoir No. 1 Seismic Upgrades	0.50
City of Milwaukie, OR	Elevated Water Tank Seismic Upgrade	1.50
City of Woodburn, OR	Elevated Water Storage Tank	0.75

Lakeshore Reservoir Replacement Project | Clark Public Utilities, WA

Contact

Barry Lovingood
p: 360.992.8020

Key Staff

Justin Ford, Matt Hickey,
Peterson Structural
Engineers

- ✓ Two new 3 MG composite elevated tanks
- ✓ Replacement of two existing steel standpipes
- ✓ Preliminary and final designs, permitting services and construction phase services
- ✓ Hydraulic analysis and system operational assessment to confirm overflow elevation and size



Terry Cargil Reservoir | City of Lacey, OR

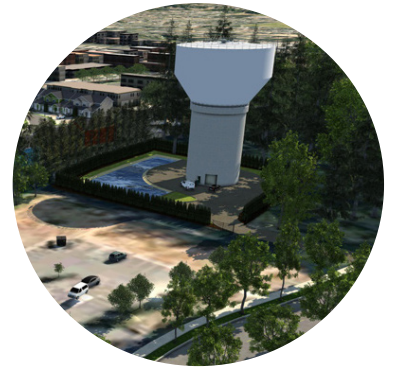
Contact

Terri O'Neal, PE
p: 360.438.5600

Key Staff

Justin Ford, Matt Hickey,
Peterson Structural
Engineers

- ✓ Design, permitting, and construction of a 1.25 MG composite elevated tank
- ✓ Assistance with public outreach
- ✓ Design includes internal stairway, control room in support column, mezzanine for storage, and provisions for cellular conduits
- ✓ Hydraulic analysis to evaluate operational considerations and water quality
- ✓ Project Report for the Department of Health



Elevated Reservoir 4 Replacement | Covington Water District, WA

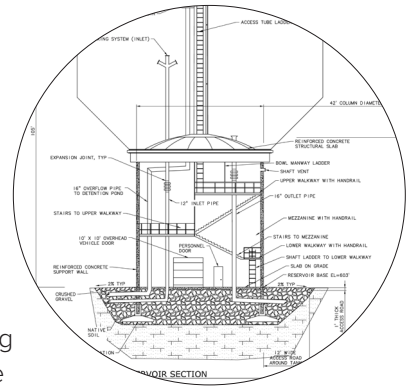
Contact

Steve Lee, PE
p: 253.867.0940

Key Staff

Justin Ford, Matt Hickey,
Peterson Structural
Engineers, Industrial
Systems

- ✓ New 1.5 MG elevated reservoir
- ✓ Reservoir sizing and siting analysis
- ✓ Reservoir type and style analysis to manage life cycle costs
- ✓ Establish new pressure zone to improve water service pressures
- ✓ Maintain high water quality by minimizing dead storage in tank
- ✓ Systematic reservoir alternatives analysis resulted in selecting a tank type that provides the District the best long term value



Elevated Tank Pre-Design | City of Idaho Falls, ID

Contact

David Richards
p: 208.612.8472

Key Staff

Justin Ford, Peterson
Structural Engineers

- ✓ 2 MG elevated tank in downtown Idaho Falls, plus redesign of 3,000 GPM well that supplies the tank
- ✓ Evaluated four potential sites and designing connected piping to the well that supplies the tank and piping distribution system
- ✓ Supported public involvement
- ✓ Evaluation of cost competitive tank style
- ✓ Full design following pre-design



Forest Park 0.5 MG “High” Reservoir | City of Portland Water Bureau

Contact

Mike Saling
p: 503.823.7411

Key Staff

Matt Hickey, Peterson
Structural Engineers

- ✓ Design and construction support services for a new 0.5 MG Hydropillar-style reservoir
- ✓ Reservoir siting analysis
- ✓ System operational analysis
- ✓ Stormwater management
- ✓ Permitting including land use and environmental permitting near sensitive areas
- ✓ Murraysmith led building permit process
- ✓ Near public park (Forest Park)



Kennydale Reservoir | City of Renton, WA

Contact

Abdoul Gafour
p: 425.430.7210

Key Staff

Matt Hickey, Peterson
Structural Engineers

- ✓ Design and construction support services for a new 1.29 MG welded steel standpipe-style reservoir to serve Kennydale
- ✓ Site presented several challenging constraints: parcel size, soil conditions required a pile foundation, close to homes/businesses, and fire station
- ✓ Reconfigurations of the City’s existing pressure zones
- ✓ Hydraulic analysis and water supply study
- ✓ Designs for future telecommunication facilities
- ✓ Proactive and regular communication helped the City obtain required conditional use permit for the project



Thank you....to your team, for the quick turn around and thorough work on this contract.

— Abdoul Gafour, Water Utility Engineering Manager, City of Renton

Elevated Water Tank Replacement | Lusted Water District, OR

Contact

Vance Hardy
p: 503.618.29406

Key Staff

Matt Hickey, Justin Ford,
Peterson Structural
Engineers

- ✓ Performed preliminary siting and design study including reservoir sizing analysis, water system hydraulic analysis and system pressure evaluations, site alternatives evaluations, topographic surveys, and geotechnical analyses
- ✓ Installation of approximately 100 feet of 8-inch diameter ductile iron waterline, construction of a reservoir overflow/stormwater retention swale, instrumentation and control system improvements, and surface restoration at the site
- ✓ Construction near neighbors and near high school



Upper Mountain View Pressure Zone Elevated Tank | City of Shelton, WA

Contact

Bob Tauscher, PE
p: 360.432.5116

Key Staff

Matt Hickey, Nick
McMurtrey, Justin Ford

- ✓ Creation of a new pressure zone with the construction of a 400,000 gallon elevated water storage tank, yard piping improvements, transmission mains, control valve vaults, and well facility improvements
- ✓ Reservoir sizing and siting alternatives analysis
- ✓ Reservoir type and style analysis to minimize costs
- ✓ Elevated welded steel tank, piping, and well pump
- ✓ Maintain water quality by minimizing dead storage in tank
- ✓ Fast-track schedule allowing the City to meet water service obligations to the surrounding community



750,000 Gallon Standpipe | Pleasant Home Water District, OR

Contact

Dan Fraijo
p: 503.201.4341

Key Staff

Justin Ford, Matt Hickey,
Peterson Structural
Engineers

- ✓ New 750,000 gallon welded steel standpipe reservoir
- ✓ Rehabilitation of existing 600,000 gallon welded steel standpipe
- ✓ Preliminary and final designs, permitting services, and construction phase services
- ✓ Seismic upgrades to foundation, installation of high performance coating systems, and installation of a passive mixing system
- ✓ Following completion of this project, the District has sufficient water storage to meet demands anticipated for the next 20 years and beyond



Dept. of Corrections (DOC) Second Reservoir | City of Monroe, WA

Contact

Kim Klinkers, PE
p: 425.760.7895

Key Staff

Matt Hickey, Peterson
Structural Engineers

- ✓ Design of second reservoir to serve 330 zone fire storage needs
- ✓ Involved siting evaluation to determine the preferred location for the new reservoir on DOC property
- ✓ Evaluated the operation of the existing reservoir, which was found to be operating with limited freeboard
- ✓ To increase seismic resiliency and reduce risk of slosh wave damage in the existing reservoir, the new 0.85 MG reservoir was designed with a lower overflow elevation
- ✓ Final reservoir design incorporated stairs for access and a catwalk to the existing reservoir roof, improved site access, and design of stormwater management facilities



Redland Reservoir No. 2 | Clackamas River Water, OR

Contact

Adam Bjornstedt, PE
p: 503.722.9246

Key Staff

Justin Ford, Matt Hickey,
Peterson Structural
Engineers

- ✓ New 1.25 MG reservoir and rehabilitation of an existing 0.75 MG welded steel water storage reservoir
- ✓ Design, land use, bidding, and construction phase services
- ✓ Team evaluated existing reservoir, documenting all aspects of the tank and noting seismic and other deficiencies for the District to choose the preferred level of upgrades
- ✓ Extensive grading solutions to level out areas for a buried detention system, driving and parking areas, and a new seismically-actuated tank isolation valve vault
- Full tank design minimized potential schedule delays and change orders due to building
- ✓ official review of contractor deferred submittals



PROJECT UNDERSTANDING & APPROACH

PROJECT UNDERSTANDING

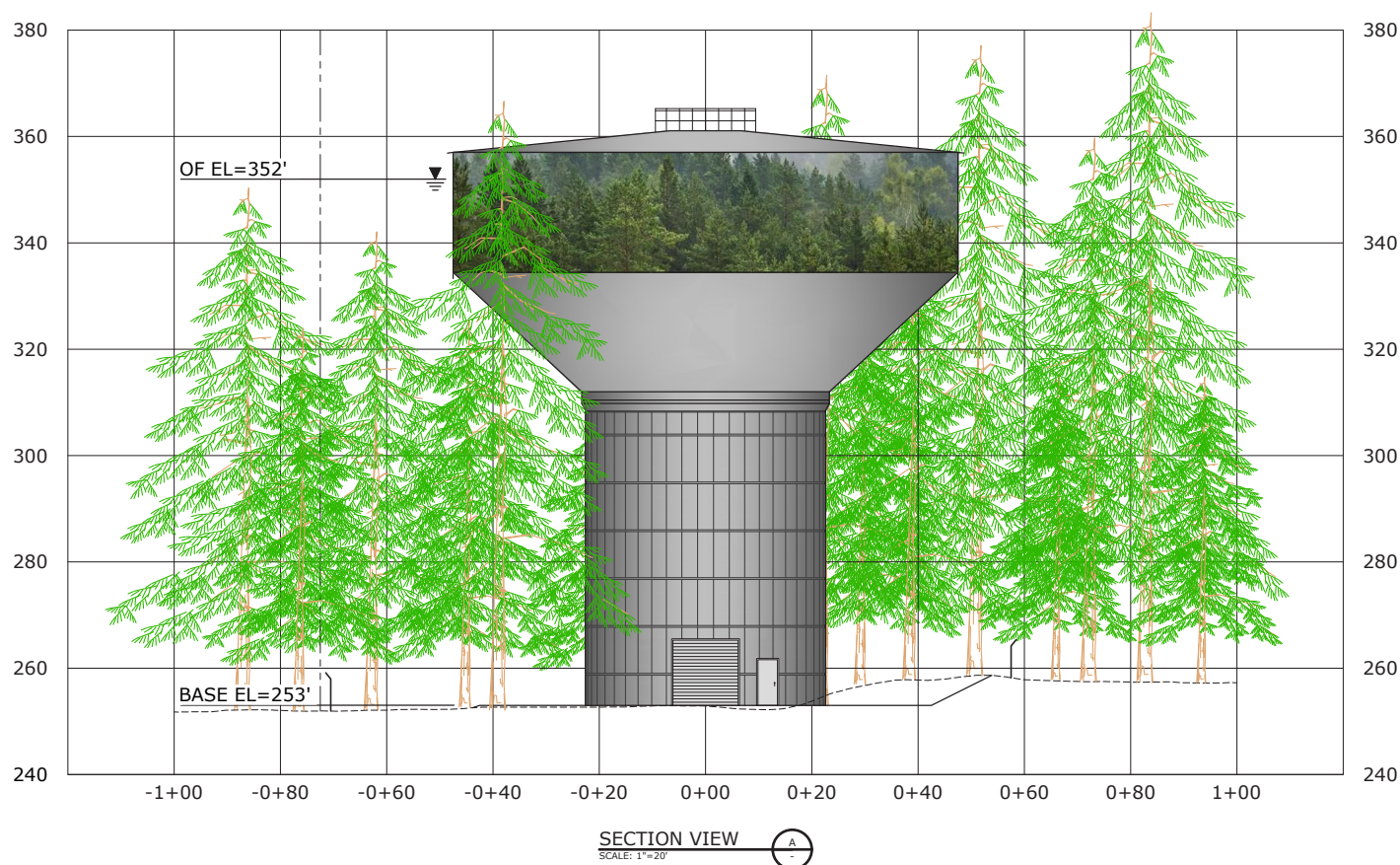
The City is seeking an engineering consultant to provide engineering services for a 2 MG elevated reservoir. The schedule for the project includes bidding the project in 2023 and construction completed in 2024.

The City's water system is divided into four service areas in the City. The Winslow Water System serves 2,450 customers in the Winslow and Fletcher Bay areas. The system consists of a High-Pressure Zone and a Low-Pressure Zone. The source of supply for the water system is groundwater supplied by eleven active wells located at four well sites. The total storage in the Winslow Water System is provided by the two High School Reservoirs which include 1 MG and 1.5 MG welded steel standpipes which are hydraulically connected.

The goal of the proposed project is to demolish and replace the 1 MG reservoir that was constructed in 1973 with a 2 MG elevated reservoir. The existing 1.5 MG Reservoir No. 2 will be retained but deactivated to be used for back up or emergency use.

The proposed reservoir will be designed to have a higher overflow elevation which raises the hydraulic grade line for the zone from 334-feet to 350-feet elevation. The upgrades will also include piping improvements. To confirm the design requirements for the improvements, hydraulic and operational analysis will be included to evaluate the impacts of raising the overflow elevation. The project will include permitting associated with land use approvals and environmental permitting.

The figure below presents an elevation view of the proposed reservoir based on the size and overflow elevation provided by the City. The figure shows a composite elevated tank which is similar to the hydropillar tank described in previous reporting generated for the City. Our team proposes to assist the City in selecting the tank type and orientation on the school property that minimizes costs while addressing other project constraints such as permitting and public input.



KEY ISSUES AND APPROACH

GENERAL APPROACH

Our approach to the Winslow Water Tank Replacement Project is to provide excellent service through solid, efficient, and quality engineering that is diligent in responding to the City's input and needs. To accomplish this, our team will listen closely to you and collaborate with your staff to fully understand your vision for success for this project. This involves proactive communication and paying attention to details essential for high-quality, low-maintenance, and long-lasting facilities. We will provide creative ideas to reduce cost and provide improved operations. Based on our understanding of the project, we have outlined an approach to successfully complete the City's project, effectively leveraging our experience working on numerous similar tank design projects.

Our collaborative approach makes efficient use of staff time by convening workshops at key design milestones to gather input and make decisions. At these workshops, our team will inform City staff of options, along with their advantages and disadvantages, discuss preferences, and ultimately arrive at a decision that has been vetted by project stakeholders.

TANK SITE SELECTION

Previous reporting provided by the City indicates the proposed tank will be located at the existing Reservoir 1 site. Based on our research, the tank appears to be on school property within an easement. Since it is on school property, early work on the project includes coordination with the school and addressing some of the other factors outlined below to optimize the location for the reservoir.

The area on which the existing Reservoir 1 is sited is surrounded by mature trees that result in a very limited area around the tank to site a new reservoir. As tree removal requires approval through the City and there may be substantial public opposition to removing mature trees, it may be beneficial to the project to assess other locations on the school property. Also, the proposed tank with the larger diameter will encroach on the required setback from the property line to the west and the required screening from the homes to the west will be a challenge. Figure 1 on the following page illustrates a proposed tank at the existing site and shows other potential locations that will minimize or eliminate impacts to trees and may provide an option with less permitting constraints and less potential public push back.

Potential Optional Sites

- **Reservoir 2 Site** - This site may present a larger cleared area and will be adjacent to existing piping. However, the site is relatively close to homes, setbacks may still be an issue and there is still a substantial potential to impact trees.
- **School Ball Fields** - Placing the reservoir adjacent to the ball fields will move the reservoir away from

the nearby homes and avoid impacts to trees but, it will impact the use of the ball fields which appears the school makes full use of based on the location of soccer and lacrosse goals shown on the aerial photos.

- **West of Church** - Placing the reservoir west of the church will avoid impacts to the ball fields and trees and locate the reservoir away from nearby homes.

If the City is considering another location on the school property, as noted above, it is suggested the City meet with the school and possibly with nearby residents to assess sentiments regarding location of the reservoir. To evaluate potential alternatives, our team will work with you to conduct a thorough, detailed alternatives analysis process. This involves first working with you to determine evaluation criteria then to select a site that meets the project needs using a systematic, efficient decision making process we have used on several similar projects.

HYDRAULIC AND OPERATIONAL ANALYSIS

Conducting a thorough hydraulic analysis will be critical to providing a reservoir that integrates seamlessly into the City's system. The reservoir site is supplied from several sources and it is important to understand the operations of these facilities to effectively integrate the new reservoirs and maintain water quality. Our team, including Lara Kammereck and Alena Thurman, will leverage current experience working on the Water System Plan to efficiently assess the system to arrive at the right solutions that optimize use of the proposed and existing reservoirs in the zone while maintaining water quality. The analysis will include assessing the impact of raising the HGL from 334 feet to 350 feet and determine any pumping needs and the optimized number and location of PRV's to properly serve the system.

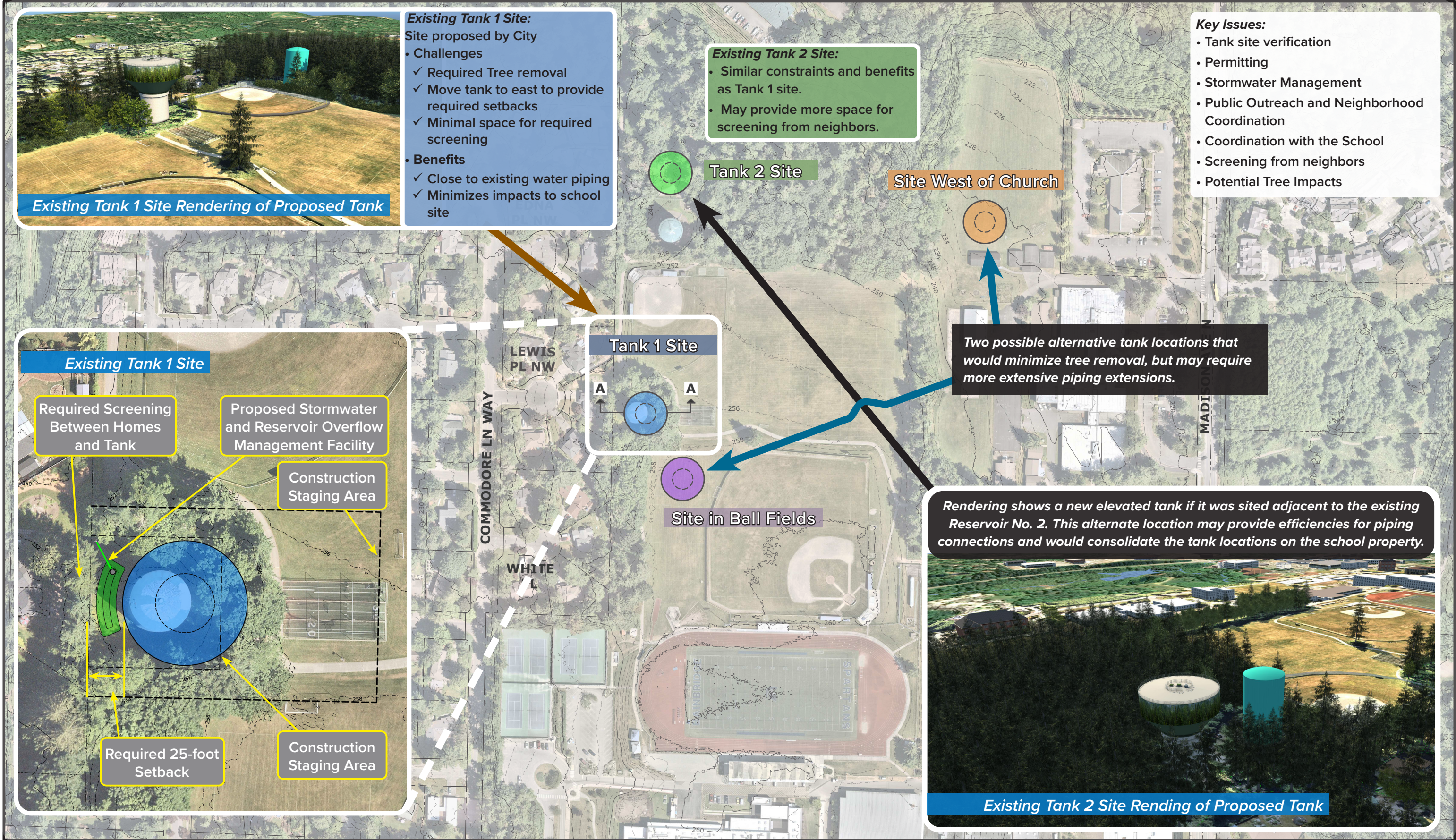
Our team's hydraulic analysis work will be focused on making sure this project meets the long-term vision for the City's water system and is compatible with the existing system.

To achieve this vision, Lara and Alena will confirm the project is compatible with the existing water system.

This new reservoir will serve the City for the next 50 to 100 years. As such it needs to be designed to meet the City's long-term storage needs. We propose developing a high-level long-term demand projection and confirming that the proposed tank size meets long-term storage requirements. We will also work with the City to confirm that this project aligns with the City's long-term vision for serving customers above 265 feet as the RWSA boundary extends north of New Brooklyn Road.

The planning team will also confirm that this storage project is compatible with the existing system operations including storage needs and supply needs. Raising the HGL of the High Zone will reduce the pumping capacity of the City's well booster stations.

Figure 1. **POTENTIAL RESERVOIR LOCATIONS**



The figure at right shows that City water demand is expected to exceed supply by 2035. Raising the High Zone HGL to 350 feet and thus reducing the well booster capacity by 312 gpm, as estimated in previous reporting by the City, moves the need for additional capacity up 10 years to 2025. In other words, this reservoir project could mean that the City needs to take immediate action to increase supply capacity.

Using the City's updated and calibrated hydraulic model, the team will confirm the minimum and maximum pressures, and available fire flows for all High Zone customers with the new reservoir in place. Finally, we will use the hydraulic model to update the City's CIP. As discussed above, new supplies may be needed sooner. Also, with a higher HGL it's possible that some projects driven by pressure and fire flow deficiencies may no longer be necessary.

PERMITTING

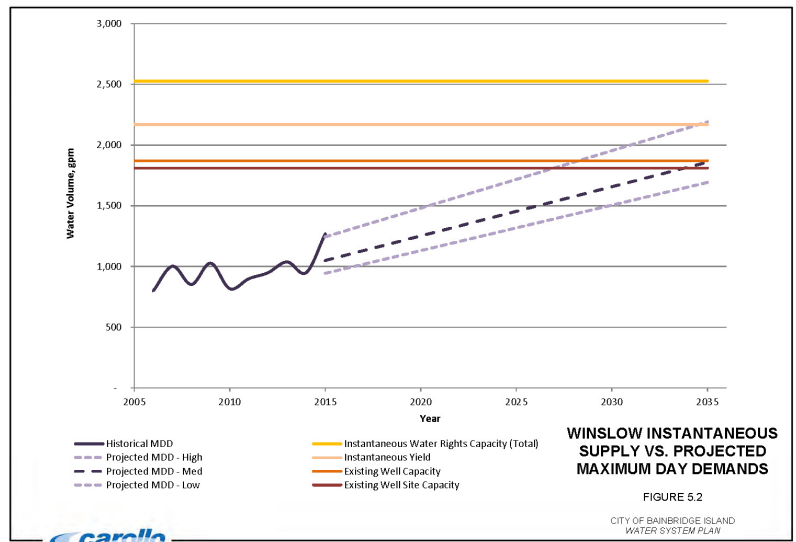
Securing the land use permit for the improvements through the City planning department is a critical element of the project. The key factors relative to the land use permit includes set back requirements at the site. The current reservoir is 46-feet in diameter and the proposed 2 MG elevated tank may be approximately 90-feet in diameter. This will place the elevated portion of the tank within the allowable set back on the west side of the tank at the existing Reservoir 1 site.

Tree removal is critical aspect of the permitting process. Since construction of the proposed tank will require tree removal at the existing site, it will be important to address this in permitting and/or site selection. The City has very restrictive provisions relative to tree removal. In addition to the City's requirements, public opposition regarding tree removal, especially the size of trees at the existing site, may be a considerable.

Permitting may be a Type III permit that requires a public hearing. Since the existing tank site is close to existing homes, there may be considerable comments which could impact the permitting schedule for the project.

The permit requirements for the reservoir are summarized below:

- Setbacks and height requirements per zoning designation (BIMC) – see BIMC 18.12.020 for R-2.9 zoning
- Perimeter landscape and screening requirements under BIMC 18.15.010
- Tree retention/removal requirements under BIMC 18.15.010
- Presence of trees meeting Landmark Tree criteria in BIMC 16.32
- BI School District consultation/easement requirements
- Access requirements
- Avoiding critical areas (ESA to conduct field reconnaissance of siting options to confirm no critical areas present. Some wetlands are present on the site west of the church.)



Following evaluation of siting options, and identification of a preferred location, the team anticipates scheduling a pre-application meeting with a city planner and development engineer to verify our code interpretation relative to setbacks, landscape/screening, tree removal/trimming, and permit requirements. Construction or expansion of utility structures is a Conditional Use in residential zones. If the tank can be sited in a location that fulfills the height exemption criteria outlined in BMC 2.16.050. F, it appears the project may qualify for Minor Conditional Use Permit, which is typically an administrative process. Because the City is seeking funding through the Public Works Trust Fund, the project will need to comply with cultural resources review requirements under Executive Order 21-02. Our archaeologist regularly assists jurisdictions under EI 21-02 and can support all steps of the process, from consultation initiation to survey, assessment, and reporting. In addition to land use and environmental permitting our team will assist with DOH report preparation and submittal and building permits for the reservoir. The building permit can be submitted based on preliminary designs from the consultant team followed submittal of the final design by the tank manufacturer to expedite the process.

PUBLIC INVOLVEMENT

A thorough public involvement process will be important for project success. The community will actively provide input as the new tank will have some visual impacts along with construction related activity impacts to the neighbors. The City will lead the PI effort with assistance from the consultant team. Our team has provided public outreach support on several reservoir projects. We anticipate assisting the City relative to the following activities as needed:

- Assisting with one-on-one meetings with affected neighbors prior to the land use permitting
- Assisting with open house/neighborhood meetings
- Creating high quality, easy to understand renderings, mapping, and exhibits
- Assisting with presentations by effectively presenting technical data in layman's terms.

We recently assisted the City of Renton through this process for their new standpipe. This involved a shadow study to show that the new tank would not adversely impact nearby homes relative to blocking sunlight.



Example Rendering of Elevated Tank at the Tank 1 Site Viewed from the West

TANK TYPE SELECTION

The selection of an elevated tank is an excellent choice for the City's needs as it avoids dead storage and can be lower cost than a standpipe. Our team will work with you to select a reservoir type that best meets the City's immediate and long-term needs. The tank type may be determined based on setback requirements, maintaining water quality, public opinion regarding aesthetics, and possible input from the school, capital cost, life cycle cost and other factors, such as accommodating cell equipment and providing storage in the base of the tank. Our approach will be to present preliminary site layouts based on options for elevated tanks and initial costs we have developed for similar projects to help narrow down possible tank configurations to make the decision process as streamlined as possible. Based on the City's preliminary review and our assessment of the project, different styles of elevated tanks may be viable options, including:

Composite Steel Elevated Tank – This type of tank can be built with volumes that meet the City's needs. The tank allows for an enclosed area in the base of the tank that can be used to store supplies and equipment. In this tank type, the column is reinforced concrete and the water holding structure is coated steel. Compared to other types of elevated tanks the recoating costs are significantly reduced due to the smaller surface area of steel which reduces life cycle costs considerably. We are currently designing four of these tanks in the northwest including projects for Covington Water District, the City of Lacey, and Clark Public Utilities in Washington.



Fluted Column Elevated Tank – This type of tank can be built very tall and with volumes that meet City's needs. The

tank allows for an enclosed area in the base of the tank that can be used to store supplies and equipment. In this tank type, both the column and water holding structures are coated steel. When the tank requires recoating, a significant amount of surface area needs to be painted. This type of tank is also becoming less common.



Pedisphere – This type of tank can be aesthetically pleasing and have a reduced shadow impact compared to the other types presented. This tank provides the benefit of an enclosed area at the base. The costs for this tank are generally higher than the others and has higher recoating costs compared to a composite tank.



We have designed and assessed all of these types of tanks and have conducted alternatives analyses to select tank types for past design projects. We'll bring this comprehensive knowledge of these facilities to help you efficiently decide on the tank type which will work best for you.

STORMWATER & RESERVOIR OVERFLOW MANAGEMENT

Managing stormwater and reservoir overflow is a key factor that needs to be addressed with the design. The existing reservoir site stormwater runoff and reservoir overflows are routed to existing storm water facilities on the site then routed through City streets to grassed and forested areas northeast of the tank sites. To address the increased impervious surface, stormwater and reservoir overflows will need to be managed on-site. We have completed dozens of similar stormwater assessment and facility designs for reservoir projects with limited area on site for stormwater management. Our approach involves taking a broad, holistic approach to effectively leverage multiple methods and opportunities to manage flows while making sure not to exceed existing downstream system capacity. We have completed dozens of similar stormwater assessment and facility designs for reservoir project with limited area on site for stormwater management. Stormwater will be properly detained on the site and infiltrated or released at flow rates matching predeveloped conditions to meet the Western Washington Storm Water Management Manual requirements. An overflow detention facility will be provided on site to allow time to shut down pumps and minimize discharges to the downstream systems. This approach offers the City of Bainbridge Island a cost-effective means to manage stormwater and overflows by using multiple routes and methods to infiltrate, detain and convey flows, minimizing infrastructure costs. Our team is working on the 5.7 MG Lakeshore Reservoir Replacement Project for Clark Public Utilities. The team is developing on-site stormwater detention

options for the constrained site. Our team is also working on the 120 MGD Willamette Water Supply WTP which requires extensive stormwater management. To manage stormwater and overflows, the team worked with Washington County, the City of Sherwood, and an adjacent developer to create a stormwater management approach that leveraged on-site detention, natural drainage ways, and regional facilities to arrive at an overall cost-effective solution that meets strict Clean Water Services stormwater management requirements and the latest hydromodification restrictions.

WATER QUALITY

Improving and maintaining water quality in the reservoir is one of the key goals of the project. Design of an elevated tank will help promote overall water quality due to minimal dead storage when compared to the existing standpipes. Matt Hickey, our team's technical advisor is an expert in operational analysis and design to achieve and maintain water quality in reservoirs. In addition to properly configuring a passive mixing system for the reservoir, Matt will evaluate the proposed and future operation of the reservoir to achieve turnover and mixing and minimizing water age to maintain water quality.

Matt will work closely with Lara and Alena to develop hydraulic system analysis scenarios to assess operations to improve water quality in the reservoir and the system.

We are currently in the preliminary design phase for replacement of two standpipes with two 3 MG elevated reservoirs for Clark County PUD in southwest Washington. These two reservoirs will increase the storage in zone



Example passive mixing system for elevated tank.

by approximately 4.5 MG. This may have an impact on water quality for the District. We are conducting a thorough assessment of the supply from their well field and demands throughout the year to confirm water quality can be maintained with the added storage.

DESIGN APPROACH

Design for efficient construction and long service life proper design that is tailored to the specific project site is critical to a successful reservoir facility that will be low maintenance and long lasting. Murraysmith's knowledge from over 35 years of reservoir design will be used to deliver a successful project for the City. We also have vast field experience assessing the condition of older reservoirs for our clients and document lessons learned from these investigations to make sure we are constantly advancing our reservoir design capabilities for the benefit of our clients. Our plans and specifications are clear and easy to understand by contractors, which leads to better bids and minimal change orders during construction. Our team can provide full structural design of the foundation and water containing element for the elevated tanks (tank suppliers provide final design for concrete pedestal on composite tank). This design approach allows the City and the design team to select all the key design details that improve service life and operations rather than accept the bare minimum a tank builder may provide if they develop the final designs.

Elevated Tank Design

Proper design of the elevated tank is critical to project success. Elevated tanks, such as the type the City is considering, require a design by the consultant team that is compatible with the tank manufacturer's standard approach to final design for certain elements and construction of the facility. Additionally, defining and planning for adequate construction staging and equipment access is critical for overall constructability. Through design of four recent composite elevated tanks, our team has worked closely with the various tank manufacturers to develop design and site planning to optimize efficiency in the design and construction of the elevated tanks.

Seismic Designs Provide a Resilient Facility

Designing all aspects of the facility to withstand seismic forces will be key to keeping this critical facility in service following an event. The facility will be designed to the latest seismic design codes, including ASCE 7, ACI, and AWWA standards and address needed freeboard to avoid slosh damage to the roof. Pipe connections will be provided with flexible connections and isolation valves. If desired, Murraysmith can design the reservoir with seismic valves equipped with electric actuators that can be remotely operated in an emergency, with the flexibility to add a seismic sensing controller to automatically isolate the reservoir when a seismic event occurs. We are currently designing three elevated tanks in western Washington that require specific design elements to withstand the anticipated high seismic forces in this region.

Our team will work closely with your operators to provide designs that meet their needs and make the facility easy and safe to operate and maintain. We will provide ladders, stairways, landings hatches, and fall prevention systems as desired to make the tank easy and safe to access and maintain. We will provide graffiti resistant coatings and will specify proper routing and brackets for cell company infrastructure that does not impact ladders and avoids damage to coatings while providing easy access. The example elevated tank section below illustrates some of the key features and appurtenances that can be included to make the facility operator friendly.

An important key to Murraysmith's reservoir project success is our practice of qualifying construction contractors through inclusion of supplemental qualification requirements. We recommend qualification of the reservoir constructor and the painting contractors. Our team provides a proven contractor qualification process to provide competition during bidding while promoting selection of a highly qualified contractor for your project, which minimizes issues during construction.

Our team will be continuously available throughout construction to help head off and/or promptly address issues or unexpected conditions. Our practice is to assign experienced engineering personnel who have been involved in a project's design to assist during construction. This approach provides important continuity and seamless interpretation of design provisions and intent. Proper inspection of a welded steel reservoir and the coating systems is absolutely critical to the performance of the system. Murraysmith provides a local team with exceptional experience and training for observation of new reservoir construction coating applications. We have developed construction observation checklists to systematically conduct thorough observations of structures and appurtenances. By providing thorough inspections by experienced engineers, Murraysmith offers the City a project that will be well constructed and meets the stringent specifications to provide a long-lasting, low-maintenance facility.

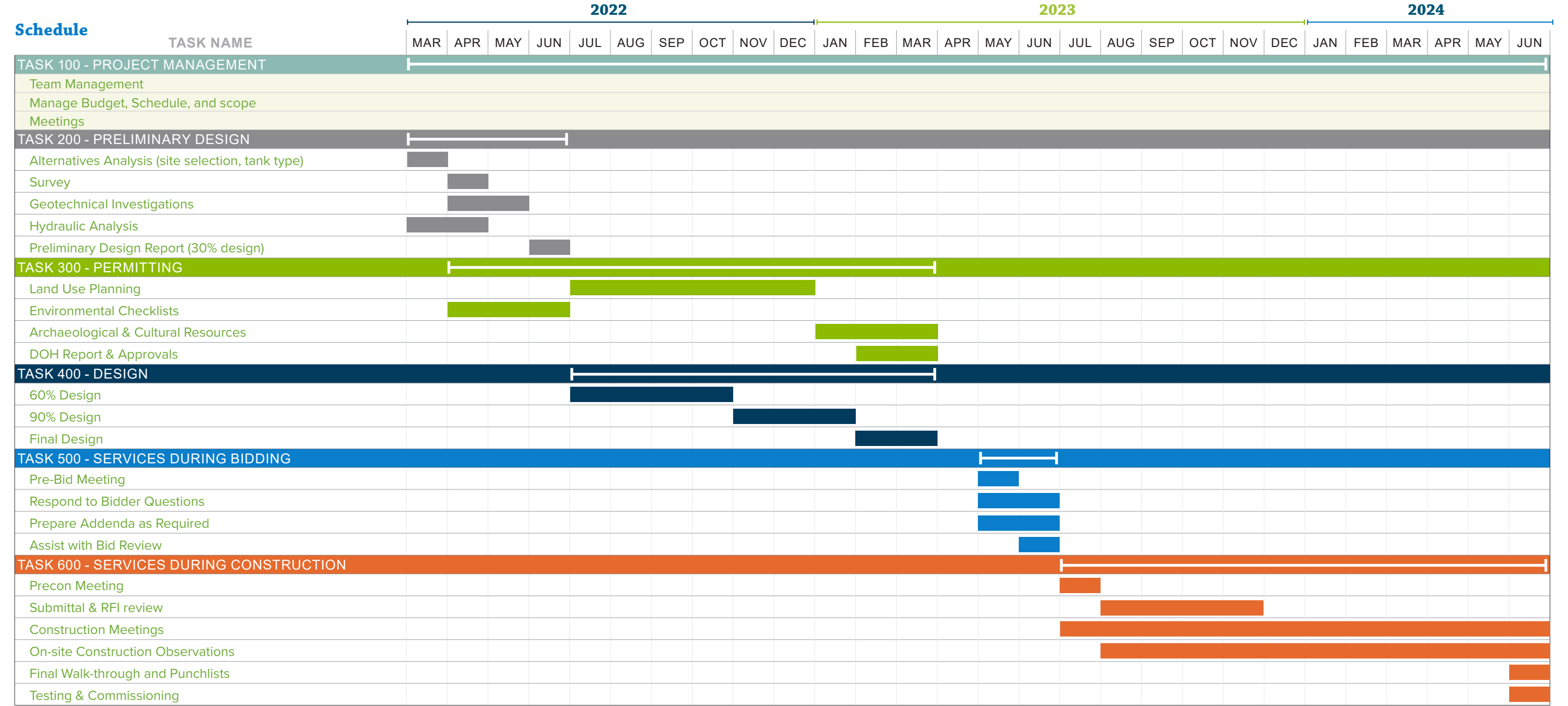
The schedule on the following page outlines the sequence and duration for key project activities to complete construction of the tank by June of 2024. The key items relative to the schedule are preliminary design as there may be some alternatives evaluation and decision making that needs to occur and permitting as there may be public input that could impact the timeline for completing this process.

[illegible]

SCHEDULE

Overview of Tasks

Task 100: Project Management	Task 200: Preliminary Design	Task 300: Permitting	Task 400: Design	Task 500: Services During Bidding	Task 600: Construction Phase Services
Includes regular communications and meetings with City staff, managing the team, and conducting quality assurance.	Includes preliminary analysis of options/cost and design layout for the site and the reservoirs (type and size). The results of the analysis will define the preferred layout of the site and identify the type and size of replacement reservoir.	Includes land use engineering/ planning to remove the existing reservoir on the site and replace it with the new elevated tank. Key permits include: Land Use Planning; Environmental; Archaeological and Cultural Resources; DOH Report; and City Stormwater Discharge Permit.	Includes design for removing the existing reservoir and constructing the new reservoir, site improvements and off site improvements. The design of the reservoir will meet current codes, land use requirements and optimize system operations. Final design will include all necessary reports, supplemental documents and cost estimates.	Includes responding to bidder questions; reviewing bid results and assist with bid analyses; assisting with vetting contractor and subcontractor qualifications; and assisting with other tasks as needed.	Includes the following services: pre-construction meeting; review and respond to RFI's; review and respond to change orders; assist as needed with contractor pay requests; assist as needed with weekly construction meeting; conduct site visits; structural inspections and engineer of record inspections; structural and geotechnical observations per building permit requirements; construction survey staking; and inspection of coatings by NACE certified inspector.



REFERENCES

The following client representatives are familiar with Murraysmith's quality of work. We encourage you to contact any of our client references.

BARRY LOVINGOOD

Civil Engineer
Clark Public Utilities

📞 (360) 600-4834
✉️ blovingood@clarkpud.com

Project:

Water System Plan Update

PUNA CLARKE, PE

Utility Engineer
City of Lacey, WA

📞 (360) 459-4494
✉️ pclarke@ci.lacey.wa.us

Project:

Lift Stations 2, 21, 25 & 31

STEVE LEE, PE

Water Superintendent
Covington Water District, WA

📞 (253) 867-0940
✉️ steve.lee@covingtonwater.com

Project:

Elevated Reservoir 4 Replacement

ADAM BJORNSTEDT, PE

Principal Engineer
Clackamas River Water, OR

📞 (503) 722-9246
✉️ abjornstedt@crwater.com

Project:

Redland Reservoir No. 2 & No. 3

ABDOUL GAFOUR

Water Utility Engineering Manager
City of Renton, WA

📞 (425) 430-7210
✉️ agafour@rentonwa.gov

Project:

Kennydale Reservoir

DAVID RICHARDS, PE

Water Superintendent
City of Idaho Falls, ID

📞 (208) 612-8471
✉️ drichards@idahofallsidaho.gov

Project:

Water & Sewer System Hydraulic
Model Development & Analysis
Support

I am writing to recognize and assert the professional excellence and quality work performed by Murraysmith with regards to the City of Tigard's 3.0 MG 550-foot Reservoir No.2. Throughout a lengthy siting process, complex public/agency coordination and permitting processes, and a series of unexpected geotechnical obstacles, Murraysmith kept the project moving on schedule and within budget. The team's sincere attitude toward customer service and satisfaction and dedication to using innovative thinking and the latest technologies in reservoir design and water system engineering and management proved, again and again, vital to the success of the project. Based on our experience with this project, I can gladly and with confidence recommend Murraysmith for any future reservoir and water system design and management projects.

– Robert Murchison, PE, Project Engineer, City of Tigard, OR



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P: 503.225.9010 | www.murraysmith.us

CITY OF BAINBRIDGE ISLAND STORMWATER SYSTEM PLAN

On January 10, 2022, the City of Bainbridge Island (City) authorized Herrera Environmental Consultants (Consultant) to prepare a scope of work and cost estimate to assist the City with developing a Stormwater System Plan (SWSP).

The City's 2017 Comprehensive Plan (Comp Plan) requires a holistic perspective to understand the interdependence among the Island's three primary water resources: groundwater, surface water and stormwater. Water resources considerations are throughout the Comp Plan, especially in the Element sections for Water Resources, Environment, Land Use, Transportation, Capital Facilities, and Utilities. The City's 2020 Climate Action Plan (CAP) requires preparation and adaption to water resources management to maximize protections for intact hydrological processes. In addition to City Council directed priorities specified in the Comp Plan and CAP, the City is required to meet regulatory requirements for National Pollutant Discharge Elimination System (NPDES) water quality permits issued to the City by Washington State Department of Ecology (Ecology).

The SWSP will provide a complete assessment and strategic approach for managing stormwater and surface water on Bainbridge Island to help guide City staff, the public, and decision makers toward meeting Council goals and Ecology imposed regulations. Groundwater will be discussed in the SWSP as it relates to stormwater and surface water, and a standalone Groundwater Management Plan is being prepared by City staff.

The primary objectives for the City of Bainbridge Island Stormwater System Plan are:

- Offer a single comprehensive resource guide for stakeholders, staff, and decision makers for sustainable and adaptive stormwater and surface water management on Bainbridge Island.
- Support full compliance of the Western Washington Phase II Municipal Stormwater NPDES permit and Industrial Stormwater General Permit; and provide a Stormwater Management Action Plan to follow.
- Inform strategy and transparency with identifying and prioritizing stormwater infrastructure asset improvement projects. Including enhancements to address deficiencies in asset inventory data, tracking, and reporting.
- Appraisal of current and needed relevant City programs, projects, and staff levels to meet present and future service demands and regulatory requirements for surface water and

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stormwater management, operations and maintenance, planning, development, and re-development.

- Evaluation of funding sources and fund utilization for surface water and stormwater management, including but not limited to grants and Storm and Surface Water Utility (SSWM) fee rates and revenue.
- Assess real and potential impacts of climate change on surface water and stormwater on Bainbridge Island and measures and activities to apply to minimize impacts.
- Propose improvements to internal and external enforcement mechanisms and procedures to implement to successfully achieve the objectives therein.

This scope of work includes a discussion of the activities, assumptions (including City responsibilities), and deliverables associated with the following project tasks:

- Task 1.0 – Contract Administration and Project Management.....3
- Task 2.0 – Stormwater Management Program Review and Assessment.....4
- Task 3.0 – Stormwater Management Action Plan (SMAP)8
- Task 4.0 – Stormwater Infrastructure Asset Management and Mapping Analysis 11
- Task 5.0 – Preparing for Climate Change to Minimize Impacts..... 13
- Task 6.0 – Stormwater Infrastructure Asset Improvement Projects Prioritization..... 14
- Task 7.0 – Preliminary Financial Evaluation..... 15
- Task 8.0 – Stormwater System Plan..... 15
- Task 9.0 – Community Engagement Plan & Support 17
- Task 10.0 –Contingency..... 18
- Project Budget – Attachment C 20
- Project Schedule – Attachment D 20

Project schedule and budget are provided in attachments C and D.

Consultant's services shall be limited to those expressly set forth herein. If the service is not specifically identified herein, it is expressly excluded. Consultant shall have no other obligations, duties, or responsibilities associated with the project except as expressly provided in this agreement.

TASK 1.0 – CONTRACT ADMINISTRATION AND PROJECT MANAGEMENT

Consultant will provide project management services including development of a project work plan in consultation with City Project Manager. The project work plan will include scope, schedule (using accepted scheduling software and identifying project milestones), budget and invoicing, deliverables, roles and responsibilities of project team members, contingency planning, including conflict resolution, and project closeout tasks.

Consultant Project Manager and contract manager will have phone and e-mail contact with the City Project Manager and City Project Manager supervisor on a scheduled and as-needed basis.

Consultant will be responsible for contract administration of the project work plan, including preparing monthly invoices. Consultant will keep the project and tasks on schedule and will proactively communicate and coordinate with City Project Manager to address real and potential schedule conflicts.

This task includes regular progress check-in meetings between Consultant Project Manager and City Project Manager to occur weekly and to last up to 30 minutes. Each meeting day and time will be agreed upon between the Consultant Project Manager and the City Project Manager and will be prescheduled no less than two-weeks in advance of the meeting and may be cancelled if both parties agree to cancel. The regular meetings will be the primary forum for discussing in short summary the progress toward scope and tasks including schedule and budget status, additional information needs, and to identify and address any emerging or ongoing concerns. These regular meetings are in addition to task-specific meetings outlined in other tasks.

For any scheduled meeting, Consultant will provide a brief meeting agenda to the City Project Manager and Consultant will take concise meeting notes to help track discussion items, tasks progress, decisions, actions, etc. The meeting agendas with summarized meeting notes will be added to a shared electronic file for ongoing reference.

All project deliverables are electronic format unless otherwise noted and all meetings and workshops are via telephone or videoconferencing unless otherwise noted. The City will provide consolidated comments on all draft deliverables. Consultant will perform QA/QC of deliverables.

Assumptions

- Primary points of contact will be the Consultant Project Manager and the City Project Manager. The Consultant Project Manager and City Project Manager will provide contact information for a back-up Project Manager should primary contact(s) be unavailable.
- Consultant will email a monthly invoice for services to the City Project Manager.

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- Consultant will setup and maintain through project close out a secured shared electronic folder to facilitate sharing documents and data between Consultant and the City.
- Consultant will organize and create calendar items for all meetings. All meetings and workshops will occur via telephone or videoconference unless otherwise noted for tasks or otherwise agreed upon.
- Consultant will provide meeting agendas in electronic document format before or during each meeting.
- Consultant will track action items needed and fulfilled by the City.

Deliverables

- Draft and final project work plan and budget (Word, Excel, Project, and/or PDF)
- Monthly invoices for services (PDF)
- Scheduled meeting calendar items (Outlook)
- Scheduled meeting agendas and take meeting notes (Word and/or PDF)
- Action items tracking (Word, Excel, and/or PDF)
- Link and access to an electronic shared folder

TASK 2.0 – STORMWATER MANAGEMENT PROGRAM REVIEW AND ASSESSMENT

At project start up and for project success Consultant must become thoroughly familiar with the current state of Stormwater Management on Bainbridge Island and overarching current and future City goals. This may be achieved through staff meetings and interviews, reviewing reports and data, engaging with stakeholders, conducting field visits, and potential other means as determined by the City and Consultant.

Subtask 2.1 – Conduct Project Kickoff Meeting

Consultant will conduct the project kickoff meeting within two weeks of final contract approval. The kickoff meeting objectives will be to confirm draft project work plan elements (including schedule, roles and responsibilities, preliminary data summary, and preliminary data gaps) and establish lines of communication between Consultant Project Manager and City Project Manager.

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Subtask 2.2 – Review Background Information

Consultant will compile and review existing available information related to developing the SWSP including information collected, generated, and compiled by the City and by consultants. Consultant will work with the City Project Manager to acquire documents and data relevant to the project.

A preliminary list of documents and data to be reviewed include, but is not limited to:

- Western Washington Phase II Municipal Stormwater Permits
- City of Bainbridge Island Phase II Municipal Stormwater Permit Annual Reports
- City of Bainbridge Island Stormwater Management Program (SWMP) Plans
- 2001 City of Bainbridge Island Surface Water Management Plan
- 2006 Surface and Stormwater Program Analysis
- 2017 City of Bainbridge Island Comprehensive Plan
- 2020 City of Bainbridge Island Climate Action Plan
- 2012 City of Bainbridge Island State of the Island's Water Report
- 2019 City of Bainbridge Island State of the Island's Water Report
- 2020 City of Bainbridge Island State of the Island's Sediment Report
- City of Bainbridge Groundwater Management Plan (2022 draft)
- City of Bainbridge Island Water Quality and Flow Monitoring Program
- City of Bainbridge Island Shoreline Master Program
- City of Bainbridge Island Capital Improvement Program Plan
- City of Bainbridge Island Sustainable Transportation Plan (2022 draft)
- City of Bainbridge Island Springbrook Creek Watershed Assessment
- City of Bainbridge Island Watershed Assessment of Manzanita
- City of Bainbridge Island Receiving Waters Assessment and Prioritization
- City of Bainbridge Development Standards and Guidelines

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- City of Bainbridge Design & Construction Standards
- City of Bainbridge Island GIS data layers
- Bainbridge Island Municipal Code
- Lists of City of Bainbridge Island public and private stormwater flow control and/or water treatment facilities inspected
- List of storm hotspots on Bainbridge Island
- Watershed Restoration and Enhancement Final Draft Plan WRIA 15 Kitsap Watershed
- Relevant City of Bainbridge Island policies and standards documents
- List of current City of Bainbridge Island staff positions relevant to the Stormwater Management Program and Storm and Surface Water Utility, including Full-Time Employee (FTE) equivalency (which staff are full-time and which staff are part-time or summer hires). Note if there are known new positions planned for the 2022-2024 time-period
- List and current lifecycle status of City of Bainbridge Island high-expense tools and equipment, service vehicles, machinery, materials, and technologies relevant to the Stormwater Management Program. Note if there are known new high-expense tools and equipment, service vehicles, machinery, materials, and technologies planned for the 2022-2024 time-period
- City of Bainbridge Island stormwater asset inspection and maintenance histories and all associated costs. Including costs for emergency response and maintenance related to storms and flooding, and responding, investigating, and cleaning up spills and illicit discharges and connections
- City of Bainbridge Island Storm and Surface Water (SSWM) Utility Fee Revenues and Expenditures, including estimation of future planned rate increases
- City of Bainbridge Island Ecology NPDES Capacity Grant Utilization
- West Sound Stormwater Outreach Group Annual Work Plans and Activities Reports
- Kitsap County Noxious Weed Control Board Annual work reports and data for Bainbridge Island
- Kitsap Conservation District Agricultural Assistance Program Quarterly and Annual Reports for Bainbridge Island

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Subtask 2.3 – Assessment of Stormwater Management Program and NPDES Permit Compliance

Consultant will review current City of Bainbridge Island Stormwater Management Program (SWMP) Plans and Phase II Municipal Stormwater Permit Annual Reports and will compare those items to the requirements of the 2019-2024 Western Washington Phase II Municipal Stormwater Permit (NPDES Phase II Permit) and upcoming potential requirements proposed for the 2024-2029 NPDES Phase II Permit.

For the Consultant to gain clarification or further information and insights into the development and implementation of the City's Annual SWMP Plan and Annual Report responses, the Consultant may conduct an interview with the City Stormwater Management Program Coordinator. Further interviews may be conducted with other City staff as deemed necessary by the City Project Manager and Consultant.

The Consultant will identify SWMP and NPDES compliance strengths, areas for improvement, and potential deficiencies and will prepare and incorporate those recommendations into the SWSP. Recommendations are expected related to staffing, asset and data management, mapping, record keeping and tracking, enforcement mechanisms and procedures, and training. Recommendations shall support current and anticipated future NPDES Phase II Permit requirements, as well as other related City-identified goals.

A discussion meeting will be scheduled to review the draft recommendations and make modifications as needed.

Subtask 2.4 – Analysis of Past Surface and Stormwater Management Plans in relation to the SWSP

Consultant will review recommendations in the 2001 City of Bainbridge Island Surface Water Management Plan and 2005 Surface and Stormwater Program Analysis to understand previous similar work as the SWSP and what informs the current SWMP. The Consultant will conclude and consider what previous recommendations the City embraced through implementation and what it did not, try to ascertain why those decisions happened and how that may inform current attitudes and resource availability.

If the Consultant finds past recommendations aligning with their current and future recommendations, the Consultant shall reference that to bolster the recommendation and include suggestions for overcoming any potential real or perceived challenges in implementing the recommendations.

Assumptions

- Staff interviews will be conducted via telephone or videoconference and will be conducted in complete confidence, will not be recorded, and any notes taken will be kept private by the Consultant and not shared with any person, business, or Entity

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outside the Consultant, or with the City or any other public agency to become evidence or public record.

- The project kickoff meeting will be conducted via videoconference and will include the Consultant Project Team (Project Manager, Technical Leads, GIS analysis lead, and Community Engagement Lead), City Project Manager, and other staff invited by the City Project Manager.
- The meeting to review and discuss draft recommendations will be scheduled to be up to 1 hour long and the attendees will be agreed upon between the City Project Manager and Consultant Project Manager.
- Stormwater Management Program assessment and recommendations will be incorporated into the SWSP and will be presented in a manner that does not imply noncompliance with NPDES Phase II Permit requirements.
- Recommendations will include benchmarks and milestones for development, implementation, and adaptation, as well as cursory estimation of resource commitments and costs.

Deliverables

- Draft and final project kickoff meeting notes (Word)
- Draft and final assessment and recommendation redlines and comments will be incorporated into the working draft of the SWSP shared by the City and Consultant (Word, Excel, and/or PDF)

TASK 3.0 – STORMWATER MANAGEMENT ACTION PLAN (SMAP)

Develop a Stormwater Management Action Plan (SMAP) document per the NPDES Phase II Permit requirement S5.C1.d.iii and accompanying SMAP guidance.

Consultant shall develop a SMAP for at least one priority catchment area/watershed on Bainbridge Island based on the watershed assessment and prioritization completed in 2022 by the Consultant, and the SMAP must be finalized in time to meet the deadline of March 31, 2023.

Consultant will prepare a draft and final SMAP that shall include:

- Summary of SMAP background, assessment and prioritization process, and description and map image of the selected watershed.

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- A description of the stormwater facility retrofits needed for the watershed, including the BMP types and preferred locations.
 - In this context, 'stormwater facility retrofits' includes projects that retrofit existing treatment and/or flow control facilities/best management practices (BMPs), and new flow control or treatment facilities/BMPs that address impacts from existing development. SMAP should include appropriate, strategic stormwater retrofits of either or both types. Pursuant to the receiving waters assessment and prioritization work, SMAP will include retrofits intended to provide flow control and/or treatment benefits that address and support the goals for the receiving water.
- Land management/development strategies and/or actions identified for water quality management.
 - SMAP may include identification of lands to protect or conserve from impervious surface conversions or native vegetation removal, and the strategic means for providing the needed protection, which could be addressed via purchase or zoning or land use policy changes, to name a few options. SMAP may also include other zoning or land use policy changes deemed necessary to prevent the water body from maintaining its current designated uses.
- Targeted, enhanced, or customized implementation of stormwater management actions related to NPDES Phase II Permit section S5, including:
 - Illicit discharge detection and elimination field screening,
 - Prioritization of source control inspections,
 - Operations and maintenance inspections or enhanced maintenance of public facilities,
 - Maintenance that requires capital construction of more than \$25,000,
 - Public Education and Outreach behavior change programs to support SMAP actions for the receiving water or the selected watershed,
 - Identified actions shall support other specifically identified stormwater management strategies and actions for the watershed.
- If applicable, identification of changes needed to local long-range plans, to address SMAP priorities.
- Include a proposed implementation schedule and the determination of the necessary budget to implement SMAP projects and activities.

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- Include facility design, land acquisition, permit fees, installation, O&M, staff, and other resources to support tailored S5.C activities for the watershed, any desired monitoring and analysis, and administrative support. Prioritize investments and actions to achieve the quickest and surest possible preservation and/or restoration of designated uses. Develop the SMAP in a way that will expect the investments to meet the goals for the receiving water and can be reasonably implemented over the course of future NPDES Phase II Permit cycles. SMAP budget should identify likely and potential funding sources and a realistic schedule to accomplish progress on both short-term and long-term actions.
- Short-term actions (i.e., actions to be accomplished within 6 years).
 - The 6-year timeframe is identified in Growth Management Act (GMA) Capital Facility Planning process. Short-term SMAP actions will help meet water quality goals, but they are a mix of opportunistic efforts (that are the result of other efforts occurring or planned in the area) and strategic projects/activities. These short-term improvements can be helpful in providing visibility to successes and gaining support for continued actions, and will complement the more strategic, long-term approach to meet SMAP objectives.
- Long-term actions (i.e., actions to be accomplished within 7 to 20 years).
 - The 20-year timeframe is identified in the GMA Capital Facility Planning process. Long-term SMAP actions and projects are strategic rather than opportunistic. SMAP should include an anticipated schedule for long-term implementation that includes interim steps. This schedule is not intended to be a Permit compliance goal, but rather an indication of the anticipated level of effort that reflects an understanding of the time and resources required for detailed planning and successful implementation.
- A process and schedule to provide future assessment and feedback to improve the planning process and implementation of procedures or projects.
 - The process to adaptively manage the SMAP will document the City's progress toward meeting SMAP goals and enables the City to report progress to Council, funders, the public, and Ecology. The process should directly reflect the protection and/or restoration goals that were set for the receiving water. The adaptive management process may also address the process used to develop the SMAP to improve effectiveness of the program. SMAP adaptations are expected over time as the City finds better ways to run the process or learns from implementation. The SMAP may benefit from strategic monitoring, particularly where little data were initially available. The SMAP should include a long-term assessment approach in sufficient detail that it is clear how the City will know and be able to report whether the protection and/or restoration goals are being achieved. The adaptive

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management process should include implementation tracking and an ongoing assessment of what portion of the planned projects and activities have taken place and how much of the watershed has been addressed.

Assumptions

- This task includes up to two, 1 hour conference calls.
- Meeting notes will not be prepared for the conference calls; redlines and comments will be incorporated into the working draft of the SMAP shared by the City and Consultant.
- The SMAP will include project summary sheets for identified stormwater facility retrofits, management/development strategies, and/or targeted non-structural actions. It is anticipated that 2 to 6 project summary sheets will be developed.
- The final SMAP will be provided to the City on or before March 1, 2023.
- SMAP will be incorporated into the SWSP.

Deliverables

- Action items tracking (Word, Excel, and/or PDF)
- Draft and final SMAP (Word and PDF)
- Final SMAP will be incorporated into the final SWSP (Word, Excel, and/or PDF)

TASK 4.0 – STORMWATER INFRASTRUCTURE ASSET MANAGEMENT AND MAPPING ANALYSIS

Analysis of stormwater infrastructure mapping and asset management by the City. The City utilizes GIS layers and Excel spreadsheets for tracking public and private stormwater infrastructure and record keeping for NPDES inspections and maintenance.

The Consultant is asked to consider with this scope of work updating the stormwater infrastructure inventory accuracy and currentness by conducting extensive mapping updates and additions from plan sets, exhibit documents, inspection maps with notes, and through field work.

The Consultant will also provide recommendations on what is needed to keep inventories updated going forward and connecting the inventories with inspection and maintenance histories and associated costs, lifecycle management, and the City's financial asset management system. Recommendations may include, but are not limited to, any needed staff, technologies, tools, equipment, budget, and work plan with goals and timelines, and all the estimated

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associated costs to implement the recommendations. Recommendations may also speak to the estimated costs, problems, and potential penalties associated with not implementing the recommendations.

Assumptions

- The City has a current contract with the Association of Washington Cities GIS consortium to help the City migrate their data into a standardized GIS schema. This work includes some data clean up but does not include field verification or updating or adding data.
- City will provide mapping standards to follow, plan sets, exhibit documents, inspection maps with notes, and geographic areas known to be deficient in inventory accuracy.
- Asset management and mapping analysis and recommendations will be incorporated into the SWSP and will be presented in a manner that does not imply noncompliance with NPDES Permit requirements.
- Recommendations will include benchmarks and milestones for development, implementation, and adaptation, as well as cursory estimation of resource commitments and costs.
- This task is focused on reviewing, updating, and recommending improvements on what actions and staff are needed
- Up to 24 hours will be spent on the desktop evaluation of the City's stormwater assets.
- Up to 48 hours (including preparation and travel time) will be spent on field assessment support.
- Depending on what we decide on for this task, meetings may be required.
- Meeting notes will not be prepared for the conference calls; redlines and comments will be incorporated into the working draft of the SWSP shared by the City and Consultant.

Deliverables

- Updated GIS shapefiles (for layers that have been updated as part of this task)
- Draft and final analysis and recommendation redlines and comments will be incorporated into the working draft of the SWSP shared by the City and Consultant (Word, Excel, and/or PDF)

TASK 5.0 – PREPARING FOR CLIMATE CHANGE TO MINIMIZE IMPACTS

Assess current and potential future impacts of climate change on Bainbridge Island surface waters and stormwater systems and recommend measures and activities the City may apply and prepare to address and minimize impacts as it relates to stormwater and surface water conditions and management.

Consultant will include in the assessment, but is not limited to, review of the City's CAP, and review of current and projected trends in sea level rise, and temperature and precipitation changes for Bainbridge Island.

Consultant will provide a summary of their assessment and the anticipated impacts of climate change on stormwater and surface waters and the expected effects if the City does nothing to address or prepare for those impacts. Conversely, Consultant will make recommendations based on their assessment that would be proactive and in support the CAP that the City may consider executing.

Recommendations may include revisions to the City of Bainbridge Design & Construction Standards, City of Bainbridge Development Standards and Guidelines, and/or Bainbridge Island Municipal Code.

Assumptions

- Climate change as it relates to stormwater and surface water management includes considerations for more frequent and higher intensity storms, tides, flooding, shoreline and flood plain integrity, steep slope integrity, wetland capacity and resiliency, vegetation and canopy cover, stormwater and sewer and septic infrastructure designs and functions.
- Potential climate change impacts will be summarized based on the most recent publications and web resources developed by the University of Washington Climate Impacts Group, and other accepted respected scientific resources.
- Climate Change Impacts assessment and recommendations will be incorporated into the SWSP.
- Recommendations will include benchmarks and milestones for development, implementation, and adaptation, as well as cursory estimation of resource commitments and costs.
- No modeling will be completed to conduct the assessment.

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- The initial assessment and recommendations will be discussed during a conference call (up to 2 hours long) with City staff.
- Meeting notes will not be prepared for the conference calls; redlines and comments will be incorporated into the working draft of the SWSP shared by the City and Consultant.

Deliverables

- Draft and final assessment and recommendation redlines and comments will be incorporated into the working draft of the SWSP shared by the City and Consultant (Word, Excel, and/or PDF)

TASK 6.0 – STORMWATER INFRASTRUCTURE ASSET IMPROVEMENT PROJECTS PRIORITIZATION

Develop a strategic method for identifying and prioritizing stormwater infrastructure asset improvement projects to support a transparent selection process.

Major stormwater infrastructure capital improvement projects were last identified in the 2001 Surface Water Management Plan and were incorporated into the Capital Improvement Plan (CIP). Some of those projects have been completed, some remain on the CIP list, and some may have been removed and others added over time for various reason that may be difficult to ascertain. Small stormwater infrastructure capital improvements are achieved through the City's Annual Drainage Program and Operations and Maintenance Projects.

How projects have been selected for the CIP, Annual Drainage Program, and Operations and Maintenance Work Plan has been based on resource availability, public input, a simplified rating system (i.e., Imperative, Essential, Important, Desirable), and Council directives.

Consultant will develop a prioritization matrix with scoring criteria including, but not limited to, physical condition, performance, regulatory impacts, reliability, lifecycle, financial considerations, benefit to other projects or plans, etc.

Assumptions

- No new stormwater improvement projects will be developed as part of this task.
- Consultant will review CIP projects for consideration with the SMAP Task 3.0.
- The draft prioritization results will be discussed during a conference call (up to 2 hours long) with City staff to determine if any adjustments are needed.

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- Meeting notes will not be prepared for the conference calls; redlines and comments will be incorporated into the working draft of the prioritization matrix and then working draft of the SWSP shared by the City and Consultant.

Deliverables

- Draft and final prioritization matrix (Excel and/or PDF)

TASK 7.0 – PRELIMINARY FINANCIAL EVALUATION

The purpose of this task is to determine if the current level of revenue collected through Storm and Surface Water Utility (SSWM) rates is sufficient to sustainably support current and future Stormwater Management Program, Operations & Maintenance activities, capital stormwater infrastructure improvement plans, and implementation of the SMAP and SWSP recommendations.

Assumptions

- Stormwater Management Program costs will be developed as part of Task 2.0
- SMAP costs will be developed as part of Task 3.0
- The goal of this task is a high-level analysis (not a specific utility rate study)
- This task includes one, 1 hour conference call.
- Meeting notes will not be prepared for the conference calls; redlines and comments will be incorporated into the working draft of the SWSP shared by the City and Consultant.

Deliverables

- Action items from conference call (shared Excel file)
- Draft and final financial evaluation and recommendations will be incorporated into the SWSP. (Word and PDF)

TASK 8.0 – STORMWATER SYSTEM PLAN

The SWSP is intended to be a user-friendly technical and operational document that clearly communicates the current state of, and recommended future ideal state of, the City's stormwater and surface water management systems and programs; will include supporting data, analysis and rationale, predicted needs, prioritization criteria and results, and reasonable next

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steps to follow for continued progress. The SWSP should be written in plain language for a public audience, provide regulatory and technical references and definitions where appropriate, and use well-defined graphics that can be easily translated to web-based platforms. The Consultant will work with the City to develop an annotated outline for the draft SWSP that will be used during the development of the draft SWSP.

Assumptions

- SWSP content may be streamlined to support natural flow for readability and apprehension by a general adult audience.
- Consultant will develop a limited number of graphics for the SWSP, graphics may include maps, tables, and figures. The budget estimate provided includes development of up to 6 original graphics and up to 3 maps. The City may also provide graphics to the Consultant.
- The City will provide photographs to include in the SWSP to supplement photographs from Consultant.
- This task includes up to three, 2 hour conference calls that are anticipated to address the following topics:
 - Comments and questions on the revised draft SWSP outline
 - Comments and questions on the Internal review draft SWSP
 - Comments and questions on the Public review draft SWSP
- Meeting notes will not be prepared for the conference calls; redlines and comments will be incorporated into the working draft of the SWSP shared by the City and Consultant.
- The City will provide a consolidated set of comments on each draft of the SWSP using tracked changes and comments in Microsoft Word or PDF, or a share online document format.
- The SWSP is anticipated to be streamlined (e.g., 50 to 60 pages for the main text)
- No City Council or public meetings are included in this task; these are included in Task 9.0 (Community Engagement Support).
- Final matrices and technical memoranda produced for previous tasks may be included as appendices to the SWSP

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Deliverables

- Internal review draft SWSP (Word and PDF)
- Public review draft SWSP (Word and PDF)
- Final SWSP (Word, InDesign and PDF)

TASK 9.0 – COMMUNITY ENGAGEMENT PLAN & SUPPORT

A community engagement plan will be prepared that outlines the approach that will be taken for public involvement and participation, including key stakeholder groups, with SWSP development and implementation. The community engagement plan is anticipated to utilize City communication channels which may include Listservs, newsletters, webpages, social media, videos, , Engage Bainbridge public meetings, and Committee and City Council meetings. To maintain ongoing community and City staff and Council engagement after completion of the final SWSP, a web-based version of the SWSP will likely be produced and therefore should be considered throughout SWSP creation.

Assumptions

- The community engagement plan is intended to be a short document (4 pages or less) that outlines the approach and schedule.
- City staff will identify primary stakeholder groups to include in the community engagement effort.
- City staff will be responsible for scheduling meeting spaces for public meetings (if held in person).
- City staff will be responsible for preparing promotional materials and advertising community engagement opportunities, and fielding questions about community engagement efforts.
- City staff will be responsible for the formatting and publication of the project introduction and status update articles that will be developed for distribution via City communication channels. Consultant will provide a brief text description of the project overview, status, and upcoming events to include in the project introduction and status update articles. Public comments/survey questions may also be distributed through Engage Bainbridge.

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- Consultant will lead the preparation of PowerPoint slides for the public meetings, Committee and City Council meetings.
- The public meetings are anticipated to occur at the following stages of the project and cover the following topics:
 - SWSP kickoff meeting – introduce the project and collect early public input
 - Public Review Draft SWSP meeting – review the Public Review Draft and collect public input
- Up to two Consultant staff will participate in each public meeting and in each Committee and City Council meeting (assumed to be 2 hours long each). Two meetings are assumed to be in-person and two meetings are assumed to be attended virtually.
- The content for the web-based version of the SWSP will be pulled from the SWSP. No new graphics will be developed specifically for the web page that are not included in Task 8.0.

Deliverables

- Draft and final community engagement plan (Word and PDF)
- Text for up to two project status articles for distribution via the City communication channels (Word)
- Draft and final agendas for the public meetings (Word and PDF)
- Draft and final PowerPoint slides for the public meetings and Committee and City Council meetings (PowerPoint and PDF)
- Draft and final notes and quantitative and qualitative analysis from all meetings and feedback channels (Word and PDF)

TASK 10.0 – CONTINGENCY

The nature of this project is such that additional technical needs may arise that are pertinent to the overall scope of services. However, the specifics of these needs will not be known until some preliminary work has been accomplished. Examples needs could include:

- Follow-up tasks based on data gaps and needs assessments (Tasks 2.0 and 4.0)

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- Developing additional SMAP or Capital Improvement Plan projects beyond the current scope (Tasks 3.0 and 6.0)
- Additional or more lengthy meetings

Consultant will provide additional services as requested by and authorized by the City, subject to amendment of the approved scope of services. Consultant shall submit a scope of services amendment and corresponding budget estimate for supplemental services not covered in previous tasks as may be requested by the City. The City shall provide written authorization to proceed with any supplemental services prior to any such work being performed by Consultant.

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PROJECT BUDGET – ATTACHMENT C

The estimated project budget is provided in Attachment C.

PROJECT SCHEDULE – ATTACHMENT D

The proposed project schedule is provided in Attachment D.